NATIONAL PETROLEUM NEWS

JULY 18, 1928

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Why the Nozzle-Control *VISIBOWL* is made also in 8-gallon size

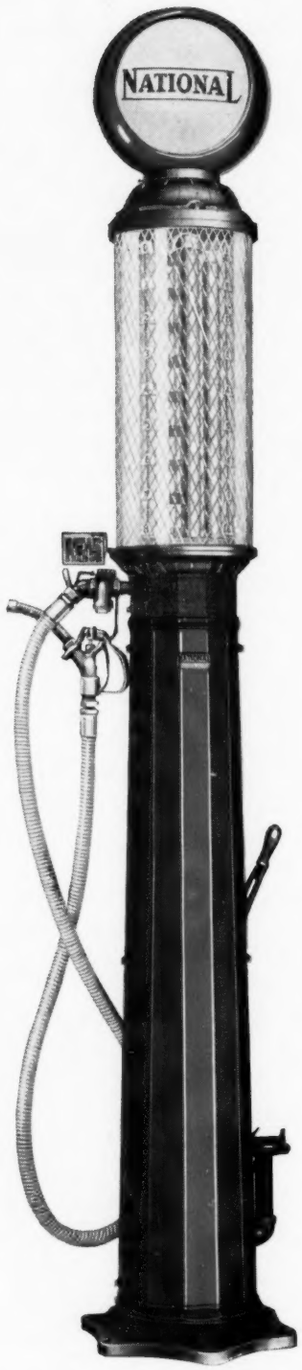
Reg. U. S. Pat. Off.

TO have nozzle control, a visible pump must, of course, be of the eye-measure type. But the inherent difficulties of securing satisfactory accuracy in this type are minimized in the *WET-HOZE VISIBOWL* by the use of 9¾ inch diameter bowls. This limit of diameter for eye-measure pumps is now generally recognized, is preferred by many Weights and Measures Officials, and is required by law in some states.

The narrow bowl is necessarily longer, and in the 10-gallon size it requires about 6 inches greater height. The 8-gallon bowl, however, permits the same height (9′0″) as that of most 10-gallon positive-stop pumps. It also gives correct proportions, and most attractive appearance.

While the 8-gallon pump is an innovation in this country, careful analysis of *today's* gasoline purchases shows that the number of individual sales above 8 gallons is becoming proportionately lower. Two-thirds of today's cars have such small fuel capacity that they can rarely take more than 8 additional gallons to fill their tanks. The 8-gallon *WET-HOZE VISIBOWL* will give satisfactory full-tank capacity in locations where any visible pump is suitable.*

*Locations which can expect a fair proportion of those cars with large capacity tanks—especially buses and trucks—should be equipped with the speedier modern piston type of pump rather than any size or kind of visible.



Model 708
8-gallon
Wet-Hoze Visibowl

Model 710 — 10 gallons
Model 705 — 5 gallons

NATIONAL RECORDING PUMP CO.
DAYTON, OHIO

Warehouses also at New York and Chicago

NATIONAL

Manufacturers of the POSITIVE STOP and WET-HOZE VISIBOWLS, also NATIONAL SIMPLEX and DUPLEX piston pumps. All approved and labeled by the Underwriters.

BULK STORAGE PLANTS

Designed

Installed

LACK of finance is no reason for holding up the installation of your new bulk stations.

Graver Corporation will design, install as many new stations as you want, arranging the payments on our new payment plan convenient for you to meet. Even without the payment plan, having Graver make the complete installation is a very convenient arrangement for you. You have but one concern to consider in the purchase—and but one account on your books. And—most important one concern who is responsible for the satisfactory mechanical operation of the station.

Write us giving the size and type of plants you wish. We will then send you design, prices and payment plans. This will show you how simple and economical this plan really is.

GRAVER Corporation Founded 1857

EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO America Fore Bldg. | TULSA Atlas Life Bldg. | FORT WORTH Petroleum Bldg. | LOS ANGELES 707 N. Main St.

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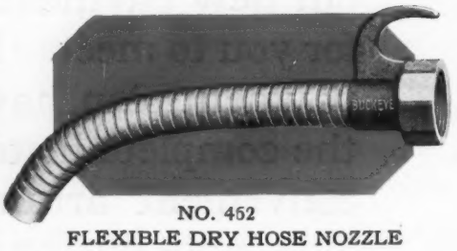
The BUCKEYE Hose Nozzle Valve

NO. 448 TYPE "H"
HOSE NOZZLE VALVE

The valve is furnished regularly with curved brass tube nozzle.

NO. 448 WITH NO. 463
FLEXIBLE TUBE NOZZLE

If desired this valve can be furnished with a flexible nozzle at slightly increased cost.



NO. 452
FLEXIBLE DRY HOSE NOZZLE

This nozzle is exceptionally handy for use on dry hose pumps.

GET your customers in —and OUT—with *speed* and you build a reputation for quick service.

Actual tests show that you can deliver ten gallons of gasoline through the Buckeye Hose Nozzle Valve on the end of a ten foot length of one inch hose practically as fast as if there were no valve on the hose at all. That is what we call "unrestricted flow." That's *speed!*

The valve opens wide—nothing is in the way of the gasoline to hinder a *full, free* flow. The disc is up, out of the way.

Leading Pump Manufacturers furnish this valve as regular equipment and it is listed as standard by the Underwriters' Laboratories.

It is simple and easily operated. Only a slight compression of the operator's hand is needed to lift the disc out of the line of flow. This valve gives long and satisfactory service.

You can speed up your service by using Buckeye Hose Nozzle Valves. Use the coupon below to get full details.

Buckeye Iron & Brass Works
356 E. Third St. **Dayton, Ohio**
Manufacturers of Quality Brass Goods Since 1860

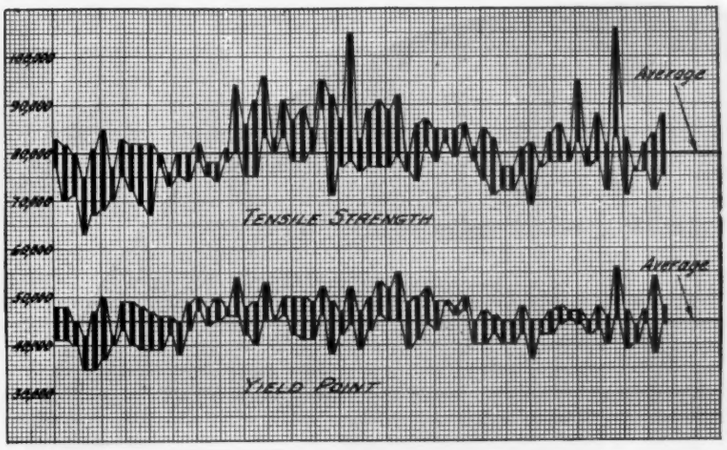
Buckeye Iron & Brass Works
356 E. Third St., Dayton, Ohio.
Please send catalog describing your Hose Nozzle Valve and other Service Station Equipment.

Name_____

Address_____

City_____

BUCKEYE



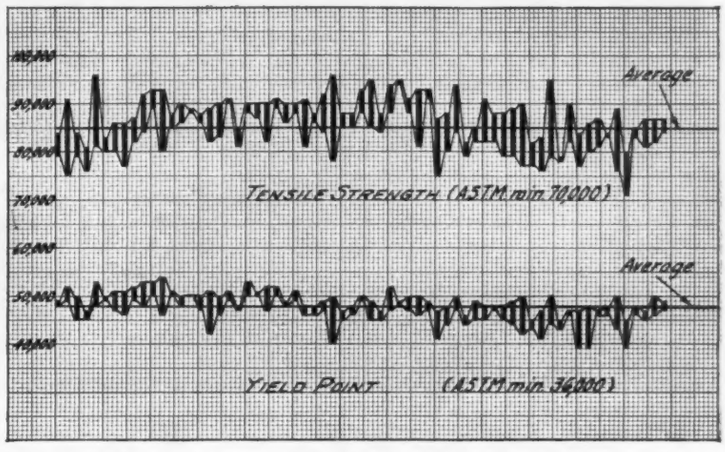
(CHART NO. 1)

ORDINARY CAST STEEL

These charts show the minimum and maximum tensile strength and yield point on 195 consecutive heats of steel. For convenience each vertical line is drawn to show the minimum and maximum properties on three consecutive heats. This chart typifies the range of tensile strength and yield point in ordinary cast steel.

WALWORTH SIGMA STEEL

This chart shows the minimum and maximum range of tensile strength and yield point on 195 consecutive heats of Walworth Sigma Steel. Note the reductions in variations which have resulted from Walworth Sigma technique.



(CHART NO. 2)

COMPARE these two charts

SIGMA HAS SWEPT SUSPICION FROM STEEL
TRADE WZ MARK

Tensile strength and yield point running well above the requirements of the American Society for Testing Materials offer striking proof of the practical results of Walworth's improved foundry technique in the making of Walworth Sigma Steel.

The charts show a comparison of typical heats *before* and *after* Walworth Sigma Steel was developed at the Walworth plants. The fact that these records cover a long series of consecutive heats is also significant evidence of the high standards of Walworth foundry practice and the continued close control of the heat treatment of all Walworth Sigma Steel castings.

The latest scientific equipment for this control, under experienced operators, has enabled Walworth to obtain such uniform results as are demanded by modern high temperature and high pressure service.

Send for complete data as given in the full set of Walworth Sigma Steel Bulletins.

Send for them

New tables of dimensions on 125-lb. and 250-lb. Cast Iron Flange Standards. Also Walworth Sigma Steel Bulletin No. 6-C, on new steel flanges and flanged fittings.

WALWORTH

Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa., and Attalla, Ala.

Distributors in Principal Cities of the World

Walworth Co., Limited, 10 Cathcart St., Montreal, P. Q.
Walworth International Co., 11 Broadway, New York, Foreign Representative

CHAMPLIN

Equally Important!

Would you suppose that any refinery took as much care in the production of kerosene as gasoline? Particularly when its gasoline is hailed as the best on the market? Champlin *does*, and produces a low-end-point, water-white kerosene, exceeding government specifications for quality,—a kerosene that answers the farmers' call for a *perfect* farm fuel, in a way that enlists him actively among the army of Champlin supporters. As your first step in the aggressive building of farm trade, investigate Champlin Kerosene. Address: CHAMPLIN REFINING COMPANY, Enid, Oklahoma.

"CHAMPLIN Oils Have Always Been Good—ALL WAYS!"

CHAMPLIN MOTOR OILS ARE UNSURPASSED IN QUALITY

USE CHAMPLIN OILS

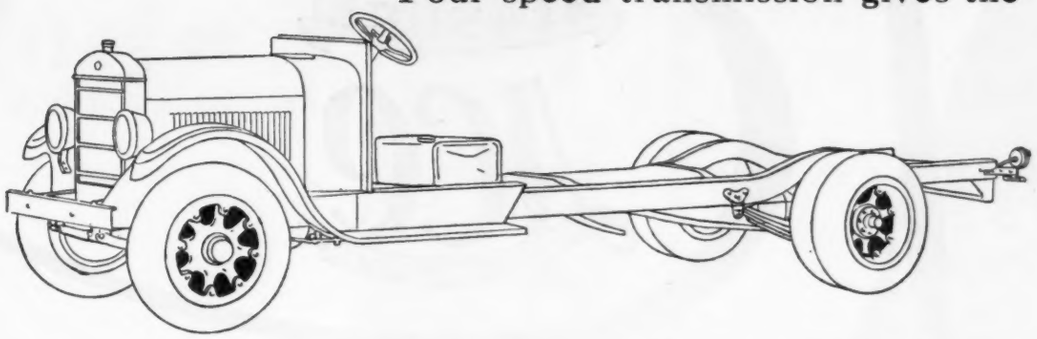
CHAMPLIN REFINING CO. *Enid, Okla.*

REO Speed Wagon Value For Oil Distributors

WITH its 175-inch wheelbase and low frame, the Senior Speed Wagon chassis makes an ideal mounting for oil tank bodies.

In addition, the Senior Speed Wagon has the 6-cylinder acceleration and 4-wheel internal hydraulic brakes that fit it for today's traffic—for today's conditions of competition.

Four-speed transmission gives the Senior Speed Wagon a greater power range; automatic chassis lubrication and extra sturdiness in every part mean longer life and more earning power.



The price of the Senior Speed Wagon is lower than that of any other 6-cylinder 3-ton truck in America. Try out the Senior Speed Wagon—start it, step on it, stop it.

JUNIOR—Capacity ½ ton
Chassis $895
TONNER—Capacity 1 ton
123-in. wheelbase, Chassis $995
138-in. wheelbase, Chassis $1075
STANDARD—Capacity 1½ tons
133-in. wheelbase, Chassis $1245
148-in. wheelbase, Chassis $1345
GENERAL UTILITY
Capacity 1½ tons
143-in. wheelbase, Chassis $1345
MASTER—Capacity 2 tons
148-in. wheelbase, Chassis $1545
164-in. wheelbase, Chassis $1645
HEAVY DUTY—Capacity 3 tons
159-in. wheelbase, Chassis $1985
130-in. wheelbase (Dump) $1935
SENIOR—Capacity 3 tons
175-in. wheelbase, Chassis $2090
Chassis prices at Lansing

REO MOTOR CAR COMPANY, *Lansing, Mich.*

SPEED REO WAGON

Powered with 6-Cylinder Motors

Announci

The CORRECT MEASURE ACE

A REGISTERING SYSTEM

"Correct to the last drop"

With the development of the new Ace, Correct Measure has scored a new triumph in the building of *correct* gasoline dispensing equipment—the best bet in its particular line—the Ace for your business!

The new Ace is more than just an electric pump—it's a complete and accurate registering system. The large dial, located on both sides of the pump, registers in gallons, ¾-gallons, ½-gallons, ¼-gallons and pints. Equipped with wet hose nozzle control, the mechanism is positive, simple and fool-proof. So positive, in fact, that gasoline can be measured and registered *by the drop!* The new Ace operates with the utmost simplicity and speed, thus enabling double quick service to the customer.

The Ace is motor driven and is astonishingly low in price in comparison with the service rendered—$163.00 f.o.b. our factory.

CORRECT MEASURE COMPANY
Rochester, Penna.

CORRECT

cing

$163.00

F. O. B. Factory

The large registering dial, located on both sides of the Ace pump, makes it possible to service cars from either side and it is thus unnecessary for the customer to leave the car. The dial is so arranged that it cannot be tampered with. It is impossible to pump air through the hose, thus eliminating false registration.

The great diameter of the body permits splendid advertising possibilities. Four electric lights are arranged around the top cylinder for night illumination.

Containing a minimum of working parts, the Ace practically defies trouble. Foolproof and accurate to a hair, the Ace bids fair to revolutionize the gasoline dispensing industry.

The Ace is equipped with an automatic counter. This counter, under lock and key, keeps an automatic check on the number of gallons sold in a day, week, month or year up to 100,000 gallons. The owner of the station can carry the key to this device and thus keep a cash register record of gallons sold and eliminate any dishonesty.

The Ace is equipped with a visi-gauge having an ample sized glass window which permits the customer to see the gasoline as it flows from the overhead container. This visi-gauge also effectively displays the various colored gasolines. Light in weight, with a cross level embedded in the body, it is an easy pump to install.

MEASURE

COLOR STABILITY
. . . A four ounce glass bottle of POORLY REFINED GASOLINE exposed to the sun— WILL SHOW—
. . . A four ounce glass bottle of PARCO GASOLINE exposed to the sun indefinitely WILL NOT SHOW—

1—A MILKY APPEARANCE.
2—A YELLOW COLOR.
3—YELLOW, BROWN or BLACK DEPOSIT WHICH IS NOT SOLUBLE IN GASOLINE.
4—A DISAGREEABLE ODOR.

Therefore ~ a gasoline which has not **Color Stability**

Will:

1—Look badly in your pump bowls.
2—Deposit gum on the screens and in the gasoline lines of your customers cars.
3—And possibly corrode the brass and copper engine parts with which it contacts.

All of which lose you business and increase your marketing costs, which are already high. • • • • • We invite you to test PARCO GASOLINE by exposing it to sunlight indefinitely. *Then you'll know.*

Our Division Sales Offices will be glad to inform you where you can secure an actual shipment sample of PARCO Gasoline for this purpose.

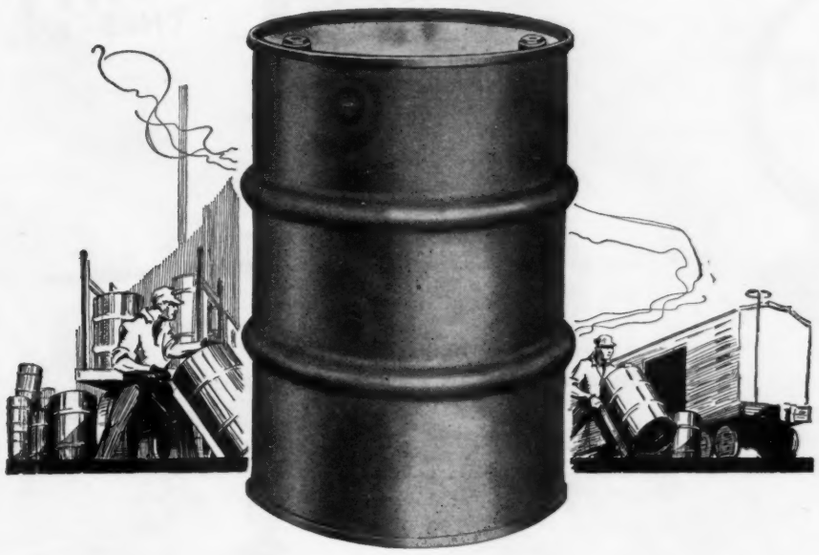
PRODUCERS AND REFINERS CORPORATION
Independence Denver Chicago Tulsa Salt Lake City Memphis Omaha

Our modern Refinery at Parco was built to advantageously supply Northwest jobbers. • • • • • •

Our Refining Facilities at West Tulsa and Blackwell mean advantageous freight rates for Southwest and Central States jobbers.

PARCO
GASOLINE
Seasonably Volatile . . . Anti-knock

PARCO PETROLEUM PRODUCTS



Benetco Steel Containers

(2 to 65 gallons)

Protect Your Products In Transit

YOU are buying real shipping insurance when you buy Benetco steel containers. They are built to stand the abuse of rough handling, jolting and jamming in transit without injury or leakage of contents.

When your products need protection and when you are shipping in less than carload lots you will find that Benetco will relieve you of all worry—for your customers will receive the merchandise in perfect condition.

[*Write for further information*]

WILSON & BENNETT MFG. CO.
6520 S. Menard Ave. Chicago, Ill.

BENETCO
Steel Containers

When the cars come crowding in

ALL out. Every turnpike crowded. Every crossroad thronged. But no traffic snarl at the G & B station.

G & B Visibles take care of capacity business with speed and accuracy. With an unfailing smoothness of operation they help the passage of hundreds of motor cars through the filling station. Each customer gets adequate service. No one waits.

Built to deliver thousands of gallons daily, G & B Visibles meet rush hour demands with tested effectiveness. The speedy mechanical pumping unit—the smooth, even flow from the bowl—the time-saving G & B Progressive Method of Delivery for handling extra gallonage, are features which help your dealer serve more customers and sell more gasoline.

Write for literature describing these sales-promoting pumps. Bulletin T-176 gives information on nozzle control sight measure type; Bulletin T-179 on mechanical measure model.

GILBERT AND BARKER
MANUFACTURING COMPANY
PUMPS AND TANKS FOR THE OIL TRADE
SPRINGFIELD MASS. U.S.A.

Smoothness

To make a graceful slide down the chute into the water takes balance and good timing. Smoothness is achieved. After all, that's what we want in the operation of a motor car. To many the technicalities do not appeal—***smoothness*** is all that's wanted. Trust smooth operation to **TAGOLENE** Motor Oil and greases. **TAGOLENE** is made to stand abuse and will carry a car through periods of over-strain and even neglect. Write, wire or phone Skelly Oil Company, El Dorado, Kans., Tulsa, Kansas City, Omaha, Minneapolis.

TAGOLENE
MOTOR OIL

MADE TO STAND ABUSE

MADE by the REFINERS of SKELLY *REFRACTIONATED* GASOLINE

Did *You* Borrow It?

HOW often have you heard the Boss say: "Who's got my copy of National Petroleum News?" And then you wish you hadn't borrowed it again!

You can have your own copy regularly each week for only $3.50—52 issues. This low price permits every man in the oil industry who wants to study its development and become a better oil man, to have his own copy—at the office or home—to study and think over.

Knowledge and ideas are making profits for all today. And it's *knowledge of the oil industry itself* that is necessary to get profit (or salary increase) from that business.

NATIONAL PETROLEUM NEWS' contribution to your knowledge at the low rate of $3.50 for 52 issues is made possible by its big volume of business. This big volume permits us to furnish you a staff of expert oil writers located at important oil centers, correspondents in outlying fields, and the writings of technical and scientific men on production, refining, natural gasoline and marketing.

So if you did borrow this issue or can use another for your own study at home—avail yourself of this universal rate TODAY!

NATIONAL PETROLEUM NEWS, 732 Penton Bldg., Cleveland, Ohio.

Send the next 52 issues of National Petroleum News to me at the address given below. Enclosed is check (draft or money order) for $3.50. (Foreign $5.00.)

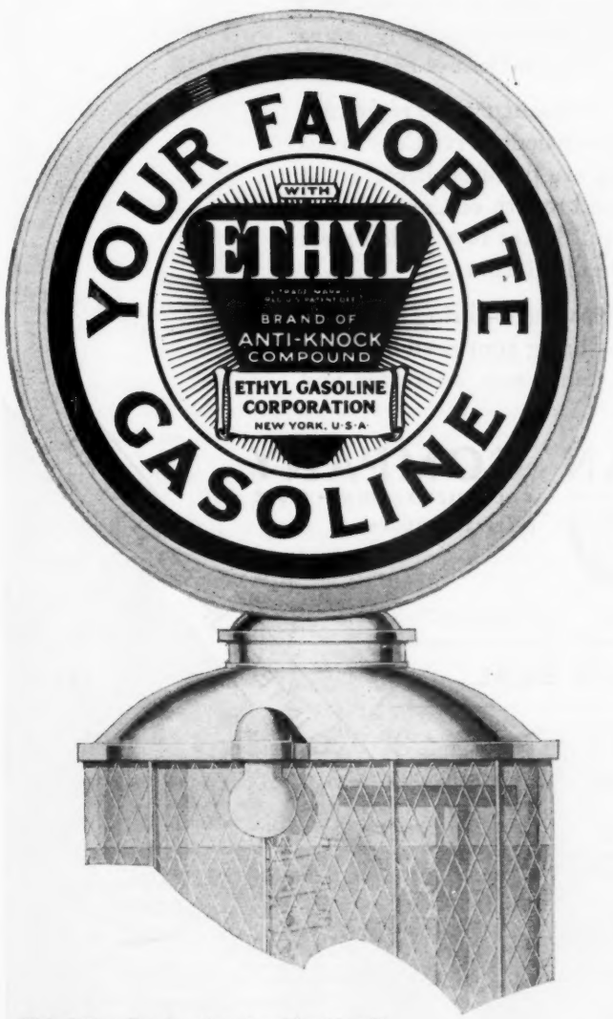
NAME _____

Street or Box _____ **Branch engaged in** _____

City-State _____ **Company** _____

Less than a teaspoonful to the gallon

but what a difference ETHYL *makes!*



Ethyl Gasoline is colored red for identification but not all red gasolines contain ETHYL, whose active ingredient is tetraethyl lead. It takes more than dye to make an "anti-knock" (high compression) fuel.

ETHYL is the name of the "anti-knock" compound developed by General Motors Research Laboratories to make motor gasoline more efficient.

Leading oil companies mix it with their gasoline at their refineries to form *Ethyl Gasoline*—the standard high compression fuel.

There is less than a teaspoonful of ETHYL fluid in a gallon of Ethyl Gasoline—but what a difference it makes!

In cars of ordinary compression, ETHYL eliminates that "knock" and power loss as carbon forms—and turns the higher compression created by the carbon deposits into extra power. As for the new high compression cars, ETHYL made them possible!

Ethyl Gasoline is now available throughout the United States and Canada at pumps bearing the ETHYL emblem. Ride with ETHYL today.

ETHYL GASOLINE CORPORATION

25 Broadway, New York City — 56 Church St., Toronto, Ont., Can.

ETHYL GASOLINE

Knocks out that "knock"

What's new — and worth using?

THE consumer is king. Sales depend on how you study and serve his convenience, in opening and using your containers; his protection, in the delivery of the contents in prime condition; his interest, in the display value of the package.

Many a successful package has been born within the Canco organization. Many another has been perfected by Canco skill from outside suggestions, to the benefit of both sides.

The main thing is to produce in quantity the *right* container for every marketing requirement. Five Canco contributions to better packaging are pictured here. These illustrate also something of the breadth of Canco manufacture, which extends from pill boxes to 5 gallon steel drums and even to heavy galvanized ash cans.

If you have an idea for a better package—bring it here. If you need one in your business—bring your need here. On either errand, you will find Canco men interested and helpful and fair.

AMERICAN CAN COMPANY

CONTAINERS OF TIN PLATE - BLACK IRON - GALVANIZED IRON - FIBRE
METAL SIGNS AND DISPLAY FIXTURES

NEW YORK CHICAGO SAN FRANCISCO

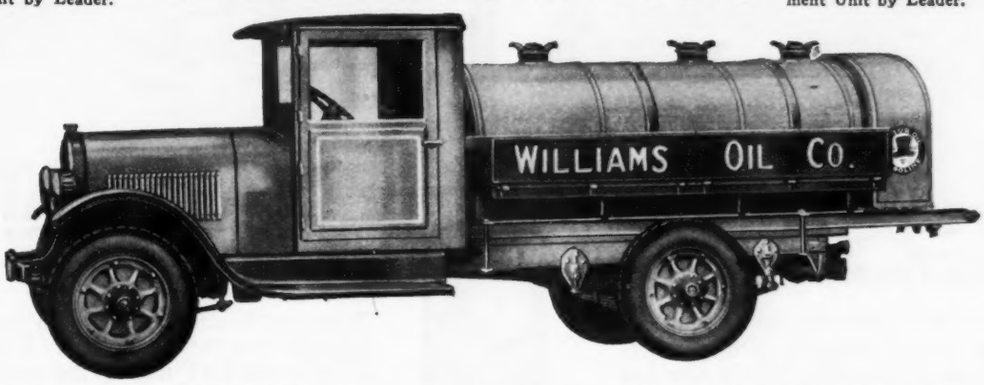
CANCO RING SEAL

Leader Truck Tanks

with I. O. M. A. PAINTING SPECIFICATIONS

This Name Plate on the back of a Truck Tank is your Guarantee that it is a Genuine Steel-Mounted, Separable Compartment Unit by Leader.

This Name Plate on the back of a Truck Tank is your Guarantee that it is a Genuine Steel-Mounted, Separable Compartment Unit by Leader.



I. O. M. A. SPECIFICATIONS

THE New Color Specifications of the Independent Oil Men of America were used on the Williams Oil Truck Tank illustrated. Without the use of the full colors here it is hard to do justice to the flashing beauty of this combination of Spread Eagle Orange and Spread Eagle Green. Leader cooperated with the Independent Oil Men of America in emphasizing the true beauty of their new color combination.

PERMANENT BEAUTY—LASTING STRENGTH

Underneath the glistening body is the inherent rugged strength that is a part of every Leader Tank Mounting. This in-built strength is responsible for the long-time, care-free service and low maintenance expense of Leader Truck Tanks. This is so true that the Leader Truck Tank has become known as The Tank That Will Outlast the Truck.

STEEL-MOUNTED

Leader Truck Tank Mountings are all-steel. This includes bolsters, sills and every part that makes the mounting.

SEPARABLE COMPARTMENTS

Each compartment is a separate, individual, removable tank. These individual compartment units are bound rigidly together by heavy, concealed tie-rods which run the full length of the tank.

GRIP NUTS AND LOCK WASHERS

Owners of Leader Truck Tanks comment on the fact that they do not jar loose in rough service and do not require periodical tightening of bolts and nuts. This is true because grip nuts and lock washers are used wherever bolts are used.

GET IN TOUCH WITH LEADER TODAY

Send for Bulletin describing these Truck Tanks of rugged, permanent beauty—the tank that will outlast the truck.

REAR VIEW OF TRUCK ABOVE

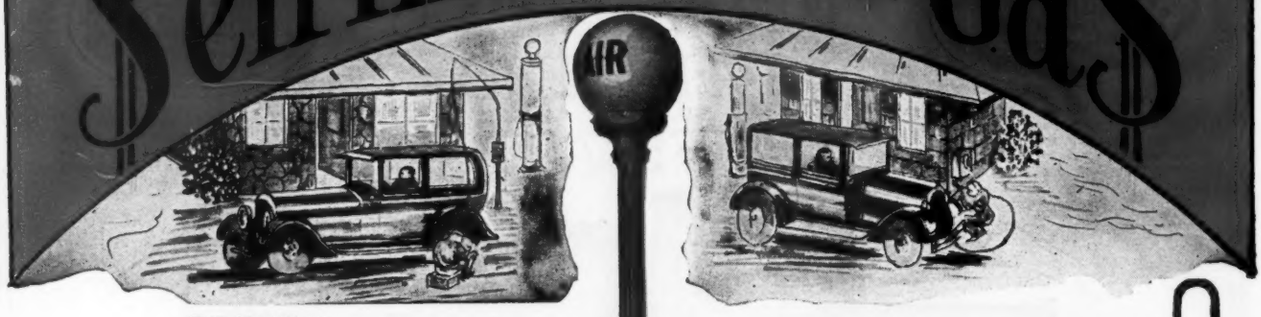
LEADER IRON WORKS

2112 NORTH JASPER STREET - - - - DECATUR, ILLINOIS

21 East Fortieth Street - - - - - - New York, N. Y.

Attract The Motorist With Free Air

Sell Him Oil and Gas



THE AMERICAN

Reel-O-Stat

with QUICK-RITE Inflator

REEL-O-STAT offers mechanically measured air by means of hose which automatically rewinds into housing when tire has been inflated . . let REEL-O-STAT invite the motorist so profitable sales of fuel can be made quickly. Reel-O-Stat service is clean, efficient, accurate . . . free from the old bugbears of dirty hose and tire gauges.

Flow of air automatically stops when correct pressure is attained.

With balloon tires in vogue, Reel-O-Stat is almost as essential to a filling station as an "American" gasoline pump.

The American Reel-O-Stat with Quick-Rite Inflator MODEL T-31 with light fixture and globe lettered "Air."

American AIR-O-STAT

Accurate Air—Brings Customers There

with QUICK-RITE Inflator

A sales-stimulator that fills a real need for the service station. Like REEL-O-STAT it gives the *accurate*, predetermined pressure that balloon tires have made imperative.

Service is rapid . . cars move out quickly . . no more crowded driveways.

Air-O-Stat is mechanically perfect. It requires no attention. Weather-proof and fool-proof. Free from adjustment and servicing.

The American Air-O-Stat With Quick-Rite Inflator MODEL T-25

American WALL BRACKETS

with QUICK-RITE Inflator

Designed for locations where space is limited. Can be attached to wall or column or used to convert an air stand already in use into a modern automatic service.

How "Quick-Rite" Inflator Works:

1. Set dial at amount of air required.
2. Slip chuck on valve.
3. Air flows immediately.
4. While tire inflates, a signal sounds at short intervals.
5. It stops sounding when the proper pressure is reached, even though
6. The chuck is still on, the air stops and the motorist knows he has the correct pressure.

JOBBERS, ATTENTION

Mammoth market means bankable profits for you. Act at once . . . . . territory being allotted fast.

Mail Coupon Today

Sell Him Oil and Gas
Give Him Free Air

The American Oil Pump & Tank Co.

1713 Dalton Street Cincinnati, O.

Mail this Coupon

THE AMERICAN OIL PUMP & TANK CO.
1713 Dalton Street, CINCINNATI, O.

Please send me full particulars regarding American Air Equipment

Name .....

Address .....

City ..... *State* .....

JUL 19 1928
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NATIONAL PETROLEUM NEWS

Standard Companies Jumping Fences

New Jersey Company Forms Subsidiary to Move Into Pennsylvania Market; Indiana Member of Old Group Now Covers Widest Territory; New York Organization Spreads to Southwest and Pacific Coast

By Roger B. Stafford

N. P. N. STAFF WRITER

CLEVELAND, July 17

THE formation last week of the Standard Oil Co. of Pennsylvania by the Standard Oil Co. of New Jersey is just another step in the search for wider pastures by Standard Oil companies that were separated and placed within metes and bounds as a result of the U. S. Supreme Court decree of dissolution in 1911.

Following that decree each of the marketing companies into which the so-called trust was split, was allotted certain territories in which to market its products and for years these boundaries were strictly respected. But within the past few years, due to changing market conditions and sometimes to mergers and realignments, Standard companies have been moving across their own frontiers into the backyards of sister companies.

Now competition between two or more Standard companies in one marketing territory is often active and bitter.

The new Standard Oil Co. will enable the New Jersey company to become an active and open competitor of one of the oldest members of the Standard Oil group, the Atlantic Refinery Co., in its home state.

There are rumors that the Rockefellers have disposed of their Atlantic Refining stock and are no longer interested in it. There are other rumors that stock in other companies of the old Standard group may be sold by the Rockefeller interests who will retain investments in only the companies that have been consistent profit earners.

The New Jersey company has not been qualified heretofore to do business in Pennsylvania but the new company which was incorporated in Delaware for $1,000,000 will be able to do a complete marketing business in the state.

This company will be the fourth Standard competitor of the Atlantic in the state. The Vacuum Oil Co., through the controlled Metro Stations, Inc., has bulk and service stations in northern Pennsylvania and a bulk station at Philadelphia. The Standard Oil Co. of Indiana through the affiliated American Oil Co. of Baltimore has both bulk and service stations in many parts of the state. The South Penn Oil Co. through the controlled Pennzoil Co. has gasoline distribution in the western part of the state.

The New Jersey company made its first effort to market gasoline in Pennsylvania two years ago when the Camden-Philadelphia bridge over the Delaware river was completed. The company then contracted to supply with motor fuel the buses operated by the Mitten public utility interests in Philadelphia. It sold the gasoline in Camden and Mitten tank trucks called at the Camden plant of the New Jersey company for it. The Standard's trucks did not cross the river.

Last year the New Jersey company began to sell gasoline in the Pittsburgh district through its subsidiary Pennsylvania Lubricating Co., a grease and industrial oil concern. The New Jersey company previously had moved into Delaware, a state which had been allotted to the Atlantic after the dissolution in 1911 when the Atlantic had three refineries and no domestic market for its products. Before the dissolution it had been engaged principally in manufacturing lubricating oils and doing a large export business.

Atlantic was perhaps the first of the Standard companies to move outside the marketing territories assumed at the time of the dissolution. Its first move from Pennsylvania and Delaware was into New England where it has both bulk and retail stations in Massachusetts, Rhode Island and Connecticut. The company built a refinery at Brunswick, Ga., and has been doing a tank car business from there into Georgia, northeastern Florida, and South Carolina. The last two or three years it has sold gasoline and motor oils to the jobbing trade in Ohio, New York and West Virginia, territories which have been also served by the three Standard Oil companies since the dissolution.

A couple of years ago the Atlantic bought the Red C Oil Co. of Baltimore and the Richmond Oil Co. of Richmond, Va., which had distribution in Maryland, Virginia, southern New Jersey, North Carolina, and West Virginia, as well as in the Atlantic's home state.

The Standard Oil Co. of New York confined its domestic marketing of gasoline to New York and the six New England states until 10 years ago when it acquired a controlling interest in the Magnolia Petroleum Co.

Magnolia was marketing in Texas, Oklahoma and Arkansas when New York Standard bought approximately 70 per cent of its stock. Magnolia has since put

in one distributing station in Kansas, 27 in New Mexico, nine in Louisiana and last year six in Arizona. However, the Arizona stations were transferred to the General Petroleum Corp. of California when the latter company was merged with Standard of New York last year.

Acquisition of the General Petroleum Corp. gave the New York company wholesale distribution in California, Oregon and Washington.

THE territory the present Standard Oil Co. of New Jersey drew in 1911 consisted of New Jersey, Maryland, Virginia, West Virginia, District of Columbia, North Carolina and South Carolina. Through the Standard Oil Co. of Louisiana, a wholly owned subsidiary, the New Jersey company has wholesale and retail distribution in Louisiana, Arkansas and Tennessee. The latter state, until a short time before the dissolution, was served by the Standard Oil Co. of Kentucky. It was ousted from the state and the Louisiana company then took over the territory. Through the controlled Humble Oil & Refining Co. the New Jersey company distributes in Texas and a part of Louisiana.

The chief expansion of the New Jersey company through its own marketing department has been into Delaware, a state originally served by only the Atlantic Refining Co. of the Standard group. The move into Pennsylvania seemingly is more important than the invasion of Delaware.

The Standard of Louisiana's tank car marketing division, however, serves a wide territory. It supplies the Standard Oil Co. of Kentucky with a large part of its supplies for Mississippi, Alabama, Georgia and Florida. Through contracts its gasoline moves as far north as the Great Lakes. One of its distributors, the Refiners Oil Co., Dayton, O., has wholesale and retail distributing stations in Ohio, eastern Indiana, and central and northern Kentucky.

The Standard Oil Co. of Ohio has always remained within the Ohio boundaries.

Besides the four states previously mentioned before the Standard Oil Co. of Kentucky markets in Kentucky. Before the dissolution it had some distribution in southern Indiana and Illinois but this was relinquished in favor of the Standard Oil Co. of Indiana.

The Indiana company has perhaps expanded more than any of the other members of the group. Its territory consisted of Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Kansas and part of Missouri. After the dissolution it moved into all of Missouri which had been serviced by the Waters-Pierce Oil Co., all interest in which the Rockefellers sold a decade or more ago. The Indiana company also moved into the northern counties of Oklahoma.

The Midwest Refining Co., a producer and refiner of the Rocky Mountain territory, was acquired about seven years ago. The Midwest's gasoline was taken by the Indiana company and the Continental Oil Co., the Rocky Mountain member of the original Standard Oil group.

Last year the Midwest bought distributing companies in Colorado and Montana and plans for this year include marketing of gasoline through subsidiary organizations in Wyoming and New Mexico also. Through the controlled Utah Oil Refining Co., Salt Lake City, Midwest has distribution in Utah.

THE Indiana company dominated a syndicate which about three years ago bought the controlling shares in the Pan American Petroleum & Transport Co. from the E. L. Doheny interests. A holding company was formed to control the Pan American. This was the Pan American Eastern Petroleum Co. A year ago the Indiana company bought out two interests in the Eastern company and acquired full control of it and the Pan American Petroleum & Transport Co.

It is through this company that the Standard of Indiana has had its widest expansion. Pan American has wholesale or retail distribution or both in all of the New England states, eastern New York, New Jersey, North Carolina, South Carolina, Florida, Georgia, Alabama, Mississippi, Louisiana, and in Memphis and Nashville, Tenn. Through the American Oil Co. of Baltimore, which is half owned by the Pan American, it has distribution in southern New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, West Virginia and in a limited way in North and South Carolina.

The company also does a tank car business in Ohio and Kentucky where its products often are marketed under its brand name PanAm. When freight rates permitted the company also moved some gasoline into Indiana. It also does a fuel oil business at Houston and Galveston.

Gasoline from the Standard of Indiana and its subsidiary or controlled companies now reach every state east of Utah, north of Oklahoma to the Mississippi river and every state east of the river with the possible exception of Vermont.

Its gasoline distribution is exceeded in scope by only the distribution of The Texas Corp. which reached all or part of 47 states.

The Continental Oil Co. of Denver held closely to its allotted territory, Colorado, Wyoming, Montana, Idaho, Utah, and New Mexico, until it consolidated with the Mutual Oil Co. four years ago. Mutual brought into the Continental fold distribution in Kansas and acquisition of the Sapulpa Refining Co. in Oklahoma, the Texhoma Oil & Refining Co. in Texas and numerous Independent jobbing companies has carried its markets into 13 states.

These include the original six states, and Kansas, Missouri, Texas, Oklahoma, Arkansas, Nebraska, and Washington. This company is now competing with the Standards of Indiana, Louisiana, Nebraska and California, the Magnolia and Humble, besides with those members of the group that have pushed out of their original territories.

The Standard Oil Co. of Nebraska, strictly a marketing company, has stayed within Nebraska.

The Standard Oil Co. of California had for its original territory California, Oregon, Washington, Nevada and Arizona. It has since invaded Idaho and Utah and its building of a refinery at El Paso and buying of one at Colorado, Texas, indicates that it might enter the tank wagon and service station trade in Texas and New Mexico and is sure to compete in the tank car business in those states and perhaps in Colorado.

Three companies which were strictly production organizations have entered the refining and marketing field in the last five or six years. These companies are the Prairie Oil & Gas Co. operating in the Mid-Continent, the South Penn Oil Co. of the Appalachian field and the Ohio Oil Co. which operates in the central states, Rocky Mountains and southwest.

THE Prairie bought control of the Producers & Refiners Corp. which gave it gasoline outlets by bulk and service stations in Iowa, Minnesota, Illinois, Indiana, Wyoming, Montana, Oklahoma, Colorado, Tennessee and Kentucky.

The South Penn bought controlling interest in the Pennzoil Co. which has distribution of gasoline in northern and eastern Ohio and western Pennsylvania. It formerly had gasoline distribution in New York state but sold this about two years ago to the Beacon Oil Co. South Penn, through Pennzoil, is an active national

(*Continued on Page* 108)

Salt Water Well Defines New Wilcox Sand Pool

(By Telegraph)

TULSA, July 17.—Conclusive proof of the northern limits of new Wilcox sand pool in Twp. 7 NR 5E was furnished Monday when the Magnolia Petroleum Co. drilled its No. 2 Shipshewano into salt water in the Wilcox, found at 4282 feet. The well, which is in the SE SW SE of 19-7-5, is a direct north offset to the big producer of T. B. Slick, and a diagonal northeast offset to the Magnolia discovery well.

Seminole Natural Gasoline Production To Increase Sharply About Aug. 15

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, July 16

NATURAL gasoline production in the greater Seminole fields will increase sharply about Aug. 15 when the lid is lifted in the south Little River district and a large number of drilling wells in proven territory are brought in.

Gasoline production in the Pearson-St. Louis district, one township west of Little River, will become important also in the early fall.

In preparation for the large crude production expected in south Little River after Aug. 15, a group of five plants are being erected. These will be ready when the wells are brought in so that gas lift methods may be employed without delay. In the Pearson-St. Louis district three plants will be in operation very soon and a fourth is planned.

Estimates of probable gasoline production from the south Little River district are placed in the neighborhood of 200,000 gallons for the fall. The Pearson-St. Louis district may produce an additional 100,000 gallons which actually should be considered as Greater Seminole gasoline production.

In the older areas of the field the decline in natural gasoline production has been quite gradual in recent months. From a peak of about 850,000 gallons per day, the field dropped to 789,000 gallons per day on March 1, and to 748,000 gallons per day by May 15. A check just completed shows net production as of July 15 to be 741,800 gallons per day, a reduction of only 10,200 gallons per day in the past two months. An accompanying tabulation gives production by companies.

Manufacturers in the older areas of the field are finding that wells put on the pump yield very low gas volumes at the start but soon build up to a satisfactory level. Some of the pumping wells have produced as much as 500,000 cubic feet of gas per day.

The richness of the gas is increasing in pumping wells along with the increase in gas production. Some of the gas now tests as high as four gallons per 1000 cubic feet in the older fields. In the St. Louis district the Wilcox sand gas is very rich in gasoline content, testing up to seven gallons, but the volume is small.

Gas produced from the upper sands yields about two gallons per 1000.

In south Little River operators are drilling or preparing to drill about 95 wells on the 10,000 acres of productive territory which was proven by the original group of cooperative tests. These wells will be allowed to be completed on Aug. 15 at which time the production of the field will be allowed to run up to 125,000 barrels per day.

The five gasoline and gas lift plants building in the district will be ready for operation as soon as the wells are opened.

THE Gypsy Oil Co. is building a 12,000,000-cubic foot plant in the center of the SE SW of 14-7-6. This will be a 6-unit absorption plant. Part of the equipment is being moved from the company's former plant in Earlsboro which has been dismantled.

The Independent Oil & Gas Co. is building a 10-unit gasoline and gas lift plant on its E. M. Harris lease in Sec. 23-7-6. This will be started primarily as an air lift plant with natural gasoline as a necessary by-product. Gas agreements have been made by virtue of which the plant will be provided with an absorption system and go on a permanent basis in the future.

The Sinclair Oil & Gas Co. is preparing to build a compression plant on its Williams lease in the SE of 15-7-6. This plant probably will begin operations as an 8-unit plant with prospects for an early addition of four 170 horsepower compressors.

The Cushing Refining & Gasoline Co. is building a 20,000-gallon absorption plant in the NE SE of Sec. 15-7-6 which also will be ready by Aug. 15. This plant will contain six compressor units.

Forrest E. Gilmore Co. is building a 10,000,000-cubic foot plant on Blackwell Oil & Gas Co. acreage in the center of the NE SE of Sec. 11-7-6. This plant will be of the compression type containing four 165-horsepower units, three 180-horsepower units and one 400-horsepower unit. Like other projected plants this will furnish high pressure gas for operation of the gas lift on producing wells, extracting gasoline from the gas before it is returned to the wells.

In the Pearson-St. Louis district one new gasoline plant is operating and another is nearly ready for operation. One other plant is definitely planned and a fourth is tentatively planned.

The Sinclair Oil & Gas Co. will build a plant in the SE SW of Sec. 24-7-4 to handle gas from the newly discovered Wilcox sand pool and upper sands. The plant will start out with six 400-horsepower units. Gas from the Wilcox sand in this district is very rich, yielding about 7 gallons per 1000 cubic feet.

The quantity being produced, however, is quite small as compared with the volume of oil, the gas-oil ratio being about 100 cubic feet per barrel of oil. A greater volume of gas is obtained from the Simpson formation but the gasoline content is about two gallons per 1000.

If the eastern half of the field develops favorably as is indicated by Magnolia's Fyke well, Sinclair will build another plant on its extensive acreage in that part of the field. The location of the plant as well as its actual building will await more definite information as to the size of the field.

THE Cushing Refining & Gasoline Co. is building a 12,000-gallon absorption plant in the St. Louis district which will be ready for operation about Aug. 1. This plant is located in the NE NW of Sec. 30-7-5. It is on acreage of the Blackwell Oil & Gas Co., an affiliated company.

A mile and a half north of St. Louis in Sec. 15-7-4, Gillespie & Moran have a new 6-unit absorption plant which has been in operation for about a month. It was the first to be built in the field.

Indications are that the Mission area west of Bowlegs will not be the scene of any gasoline plant construction at least in the immediate future. In this area production is being controlled closely. In addition, the prospective field is only a short distance from large plants in the south end of Seminole City and the north end of the Bowlegs fields. Short line extensions to these existing plants will take care of the gas for some time.

Production of Natural Gasoline in the Greater Seminole District.

Figures Are Net Gallons

Company	May 15	July 15
Amerada	30,000	30,000
Barnsdall	30,000	30,000
Carter	125,000	130,000
Crosbie & Moran	11,000	15,000
Empire & I. T. I. O.*	147,000	127,300
Gilmore	20,000	18,000
Gypsy	4,000	Dismantled
Independent	12,000	12,500
Magnolia	11,000	20,000
Pure	35,000	38,000
Roxana	16,000	14,000
Sinclair	265,000	265,000
Victor	42,000	42,000
Total	748,000	741,800

*Gasoline made at gas lift plants of the I.T.I.O. Co. is sold through the Empire Oil & Refining Co. Current net production of the I.T.I.O. is 77,600 gallons and of the Empire 49,700 gallons per day.

Only Congress Can Lay Import Duty on Crude

WASHINGTON, July 16.—Agitation by Mid-Continent producers for an import duty on crude, manifested in Washington by inquiries as to what might possibly be done to give American producers better prices for their oil, has resulted in wild reports about the Mid-Continent men having found a way for bringing about an embargo on foreign crude by the Department of Commerce or the imposition of a tariff by the tariff commission.

There have been inquiries as to whether such things would be possible. However, there is no authority for the president to place an embargo on imports of oil or anything else except in the enforcement of health or sanitary laws. Were it shown that Venezuelan crude, for instance, brought in some vegetable or animal pest, its importation could be embargoed until such time as it ceased to be the carrier of the pest.

As to the tariff commission. It has no authority at all. It can recommend the increase of a duty. There is, however, no duty on crude and a non-existent thing cannot be increased or reduced.

Congress alone can give the matter plenary consideration. An effort was made in the tariff revision of 1919 to put a duty of 10 cents a barrel on crude oil. The senate voted for such a duty but the house rejected it when the bill came to conference and so stoutly insisted upon crude being left on the free list that the sponsors for the move then made abandoned it.

Mexican crude was the cause of distress then. Venezuelan crude is now coming to Atlantic ports. In the first five months of the current year Venezuelan imports amounted to 18,222,000 barrels in comparison with 6,635,000 barrels in the corresponding period of 1927.

In the same months the total of oil imports was 31,453,000 in comparison with 21,749,000 barrels in the corresponding months of 1927. Whether those figures would impress congress is a big question in view of the fact that in 1922 the imports were 127,308,000 barrels and that they continued above 60,000,000 barrels until 1927.

Oil Tariff Statement Asked Of Republican Chairman

OKMULGEE, July 14

THE Independent Oil Association of Oklahoma, formerly called the Okmulgee District Oil & Gas Association, has sent an open letter to Dr. Hubert Work, chairman of the Republican National committee, asking that the Republican party through Dr. Work make known its position on the tariff question as it affects the petroleum industry.

A similar request will be made of the Democratic national committee as soon as the Democratic party completes its national organization.

The letter to Dr. Work was drafted by J. G. Lyons, president; R. D. Pine, chairman of the tariff committee and C. I. O'Neill, secretary of the association. It is as follows:

"Relative to your statement of June 6, concerning certain policies of the Republican party in the present presidential campaign, you are quoted in the press as saying that one of the outstanding issues of this campaign is to be 'a tariff on imports to protect our workmen in the mills, mines and fields against the cheap labor of competing nations and to give employment to our workers that they may buy the produce of our farms.'

"The Independent Oil Association of Oklahoma, which organization constitutes independent operators and individuals engaged in the production of crude petroleum, takes this opportunity of ascertaining whether or not your proposed program will provide a protective tariff on foreign crude petroleum imported into the United States.

"For the past eight years the efforts of the Independent Oil Association of Oklahoma has been continuous and insistent that a protective tariff be placed on foreign petroleum imported into the United States, however, without any encouragement from the government, and the American petroleum industry stands out as the one industry whose labor and capital has been forced to compete with cheap foreign material imported into this country without a protective tariff. It is unfair to compel American workmen in the petroleum industry to compete with the cheap labor in foreign petroleum fields.

"At the present time 250,000 barrels per day of crude petroleum is being imported into this country without a protective tariff and transported in American pipe lines to inland refineries where it is refined and sold to the American public, while the American petroleum industry, because of the unfair competition of foreign oils, is compelled to operate at a loss, producing fields already developed.

"Because of this chaotic condition, laborers and workmen in the various petroleum fields have been thrown out of employment and are in very dire circumstances; this condition obtains to such an extent that it has affected the whole industrial and commercial siuation in the petroleum districts.

"We wish to advise you that the importation of foreign crude petroleum into the United States in no way assures or provides gasoline, lubricants or other petroleum products at a price lower than the same product secured from American petroleum.

"Foreign crude petroleum is being imported into the United States, duty free, at the expense of the American petroleum industry and sold to the American public without any benefit to the consumer.

"The thousands of men normally employed in the petroleum districts of the United States who are now idle, if returned to work, would create a market for a substantial percentage of the produce of the American farms and thereby greatly relieve the present deplorable condition of the American farmer.

"We, of the Independent Oil Association of Oklahoma, believe that the chief executive of the United States should exercise his authority to revise tariff schedules at an early date so as to include a tariff on foreign crude petroleum imported into the United States."

Water Is Increasing in ITIO Wildcat

By Telegraph

TULSA, July 16.—Rapidly declining production and an increase in the amount of water have marked the first few days in the life of the Indian Territory Illuminating Oil Co.'s No. 1 Simpson in the SE NE of sec. 10-8n-5e. The well made 436 barrels for the 24 hours ended 7 a.m. July 16 with a greatly increased showing of water. The preceding day's gage had been 1204 barrels of oil with 3 feet of water in the bailer which ran every hour and a half. Enough of the 10 feet of Wilcox sand that had been drilled, will be plugged back to shut off the water.

Standard of Indiana Is Experimenting In Chassis Lubrication

By Ward K. Halbert
N. P. N. STAFF WRITER

Standard Oil Co.'s new greasing service station on the same lot with the Red Crown filling station at 39th street and Michigan avenue in Chicago, one of four in the city

CHICAGO, July 14

STANDARD OIL CO. of Indiana is going into chassis lubrication service for the motorist. So far, the officials say, it is only in an experimental way. The results of a few months experience with present equipment will determine the company's policy toward further expansion in that direction.

The company has built four greasing establishments in Chicago, at widely separated points and three of them are operating. In the 11 states where Standard markets there are about 20. They are not all alike. The four in Chicago are on the same plan but those in outlying territories are quite different.

The Chicago greasing stations are on the general plan of those which Sinclair Refining Co. and Garage Owners Oil Co., operate here, but they are less pretentious. All of them are alike in being a row of housed pits where service is rendered from a working level below grade.

Some of the Standard's greasing stations outside of Chicago use automobile lifts. No particular kind of lift was chosen as standard. Several kinds are being used, it is said, but it is probable that the company may never select one and standardize on it. Some of the outlying stations are housed and some are not. In short, the company is working out its own course in the greasing business.

No fancy name has been chosen for Standard's greasing service stations. Moreover, their modest appearance does not seem to demand that they have a name. All of those in Chicago are built of red brick and provide space for four cars each. Aside from the four entrances by which a customer would drive in for service, there is a small office door in front.

No comfortable lounging room has been incorporated in the plans. The office is small and the furniture consists of a chair and a small desk. The desk is mounted on top of a concrete block in which a small steel money vault has been embedded. A side door leads from the office to the pits where the automobiles stand while being greased.

A narrow concrete stairway leads below ground. There are two levels below grade and the stairs lead direct to the lowest level. There (without being in the way or in danger of spatter) a customer may stand and watch his car serviced. The greasers stand on a concrete platform two feet higher than the onlooker's point of vantage.

The engineer who planned the four Chicago stations made long strides in the direction of simplifying the business. There is a great deal of open space and room to work below the cars and there is a minimum of equipment in the way.

Practically everything is done by air pressure. In one corner is a big compressor which furnishes air for spring sprays, pressure for grease guns and air for tires which is available through an overhead hose reel in the upper compartment.

The lower compartment is fitted with three different systems of pipe besides electric conduit. One small system of tubes takes spring oil to all four pits where spray guns are installed. A system of 2-inch pipe, full of cup grease and always under 2300 pounds pressure, leads to both ends of all four pits where the supply may be tapped by simply connecting a grease gun to an Alemite connection.

The fourth tubular system is to dispose of crank case drainings.

A funnel, whose position may be adjusted to any motor by a swing-joint arrangement, catches the discarded crank case drainage and they flow by gravity to a tank buried outside. One flood light at each end of each pit furnishes light for the men to work by on dark days but they are not used on summer days when the outside doors are open.

Shutters to the big ports through which the automobiles enter the establishment are of the kind that lift and lower like the cover of a roller-top desk. These are not meant to be closed except when cold weather makes working conditions unpleasant. The doors are never closed except after working hours in summer.

Men acquainted with building costs in Chicago say a greasing establishment substantially like those the Standard has built would cost between $10,000 and $15,000. No attempt is being made to do automobile laundry work or render any other kind of service than chassis and motor lubrication. No automobile accessories or other lines of merchandise are carried for sale.

The force at one of these stations consists of seven men, two white and five colored. This means one manager and two laborers each for two shifts, and one substitute. The scale of prices is quite simple. A complete chassis lubrication job including spring spray is $1 for a Model T Ford. All other four-cylinder cars cost $1.25, and all other cars cost $1.50. Without the spring spray a discount of 25 cents is made all along the line. Gear compound is 25 cents a pound, put in.

Eleven rectangular tanks are installed inside each station, on the level with the automobiles. These carry all grades of Polarine and Iso-Vis as well as flushing oil and Finol for the more delicate points of friction.

No gasoline pumps are installed in

conjunction with the greasing establishments. But gasoline service is always available nearby because, thus far, the company has placed their greasing stations near regular service stations.

Every Standard filling station in a radius of a mile from one of the greasing stations is being used as a puller for the greasing station. Small signs are put up in a conspicuous place at each of the filling stations, calling attention to the company's new service and telling the closest place where it may be obtained.

Chain Store Inquiry Not To Cover Oil Stations

WASHINGTON, July 16.—While the exact scope of the Federal Trade Commission's investigation of chain store systems has not been defined, it is safe to say the inquiry will not cover chain filling stations. The Census Office defines a chain system of filling stations as one composed of two or more stations owned by an individual, corporation, partnership or association. If John Jones has two filling stations the census enumerators count his property as constituting a chain.

This inquiry into chain store systems will be upon a resolution offered by Senator Brookhart, of Iowa, and adopted by the senate. The resolution directs the trade body to undertake an inquiry into the chain-store system of marketing and distributing as conducted by manufacturing, wholesaling, retailing and other types of chain stores with a view to reporting to the senate (1) the extent to which consolidations of such systems have been made in violation of the anti-trust laws, "if at all"; (2) the extent to which consolidation or combinations of that character are susceptible to regulation under the federal trade or anti-trust laws, "if at all"; and (3) what legislation, "if any," should be enacted for the regulation and control of chain-store distribution.

The resolution, contrary to the usual form proceeds upon the assumption that the things suspected may not be so, hence the quoted words "if any" and "if at all." Frequently senate resolutions state as a fact the things which they require sómebody to make an investigation about. Inclusion of a report on filling stations would seem unnecessary inasmuch as the commission in the report it sent to the senate, Dec. 12, 1927, in response to the Trammell resolution covered the subject rather fully and acquitted the oil industry of the charge of monopolistic control.

Richfield to Trade One Share for Three of Pan American

Staff Special

LOS ANGELES, July 13

RICHFIELD OIL CO. through its fiscal agents July 11 announced that the company would exchange one share of Richfield common stock for three shares of class B Pan American Western stock in addition to scrip calling for such additional shares of Richfield common which will make the ratio of exchange one share of Richfield common for two shares of Pan American Western B in the event that the suit now pending against the Pan American Western by the United States Government is decided in favor of the Pan American. In the event that only a part of the amount involved (about $5,000,000) is awarded to Pan American Western then stockholders will be given the benefit pro rata.

Richfield has purchased from the E. L. Doheny interests all class A voting stock together with a substantial block of class B non-voting stock. Richfield officials are already in control of Pan American Western affairs, but business is being conducted under the name of Pan American Western until all details have been worked out.

The following fiscal agents are handling the transfer of the stock: Bond & Goodwin & Tucker, Inc.; Blair & Co., Inc.; Hemphill Noyes & Co., and Newberger Parsons & Co.

The following statement in part was sent to holders of class B Pan American stock over the signature of President James A. Talbot of the Richfield Oil Co.:

"As of June 30, 1928, there were outstanding 1,615,237 shares of common stock on which current earnings are at the rate of approximately $5 per share per annum. There are in reserve an additional 310,644 shares to provide for:

"(1) Conversion of outstanding first mortgage and collateral trust gold bonds.

"(2) Exercise of common stock purchase warrants issued with certain of the preferred stock, etc.

"(3) Conversion of recent issue of $5,000,000 three-year 5½ per cent gold notes.

"The exercise of these rights to purchase or convert would result in the retirement of all of the Richfield bond and note indebtedness, amounting to $7,795,500, and in addition will accrue to the company over $4,000,000 of new cash.

"The company's growth and development are best shown by the following statement of sales, earnings, and dividends:

"Current dividends on the common stock are at the rate of $2 per share per annum.

"With its profit for June estimated, the company will earn for the first six months of 1928, approximately $3,200,000 or between $2.50 and $2.60 per share on the average number of shares outstanding during the period.

"The book value of Richfield common as of June 30 was approximately $30 per share, this figure giving effect to the producing properties at their net cost of $37,792,466. A recent appraisal by the company's engineers, subsequently verified and approved by an independent petroleum engineer, places the value of the producing properties of Richfield at $104,409,-180. This valuation indicates for Richfield common stock a value of $76 per share.

"In the event of consolidation of the two companies, the resultant combination will have: (a) production ranging from 55,000 to 60,-000 barrels daily; (b) a refinery output of approximately 140,000 barrels per day; (c) a system of 1,000 miles of pipe line efficiently tying in the production of the properties at Midway, Elk Hills, and Los Angeles basin with the refineries, bulk distributing stations and marine terminals; (d) a distribution of products through approximately 9000 dealers and 173 owned service stations, and (e) marine terminals and equipment to supply efficiently the rapidly growing northern territories and export business."

* * *

LOS ANGELES, July 14—A new distillation unit is being added to the refinery of the Richfield Oil Co. at Hynes, which will give the plant a capacity of 70,000 barrels a day including a Cross cracking capacity of 15,000 barrels. Construction is expected to be completed soon after Aug. 1.

The new unit consists of a Foster pipe still and a Badger fractionating tower 91 feet high.

A new boiler house also is being built. This will be of reinforced concrete, 50 x 120 feet and will house two Edgemoor boilers of 813 rated horsepower each, with space for two additional boilers of the same size. The company has recently completed a smokestack of reinforced concrete 175 feet high and 16 feet inside diameter and an 800-horsepower Fairbanks-Morse diesel electric generating unit.

Four 130,000-barrel steel tanks were completed at the refinery and placed in service about 90 days ago.

Oregon Basin is Season's Development Among Wyoming Oil Fields

By Lawrence E. Smith
N. P. N. STAFF WRITER

CODY, Wyo., July 16

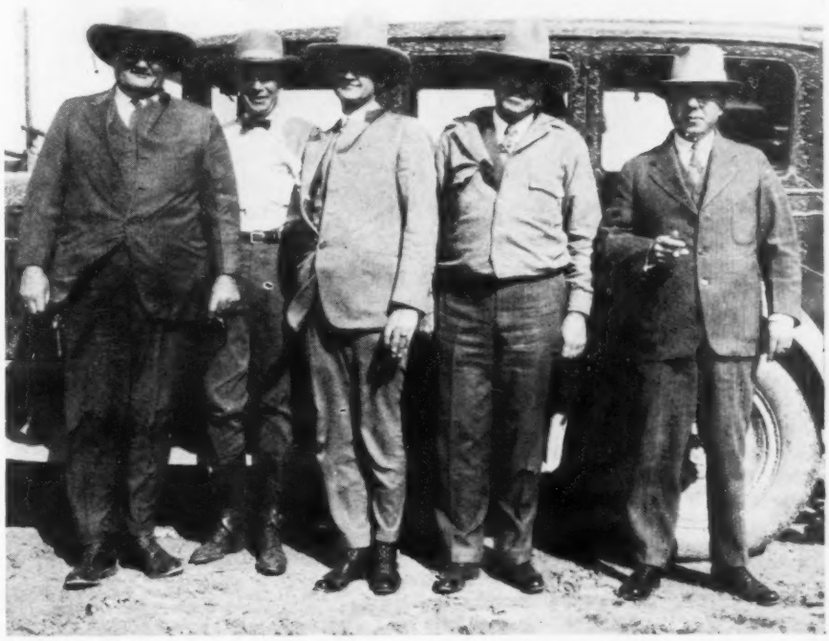
WITH little else to attract capital for development in Wyoming, Oregon Basin field, Park county, has been the area of concentrated operations for the past year and at this time is in its best stride since discovery.

It is another of those black oil propositions but promises to exceed in areal extent and productiveness anything of that sort heretofore found. It cannot be said that there was a crying need for its development at this time, for there are a number of fields scattered over the state proven for oil of similar character that are shut in. It would be possible to gather up a total of about 12,000 to 15,000 barrels daily from these fields exclusive of Oregon Basin.

The larger companies in the field express themselves as being unwilling to drill Oregon Basin at this time. Not a little of the drilling is purely defensive, offsets being called for by wells put down by small companies and syndicates. For months only one company has marketed any oil and that at prices reported to have ranged from 25 to 53 cents per barrel, exclusive of the 15 cents gathering and pipe line charge of the Illinois Pipe Line Co., which has an 8-inch line—the only pipe line in the field, delivering to tank car loading rack at Cody on the Burlington railway.

Possibility of increase in marketing outlet is seen in the taking of an option on 200 acres along the Burlington right-of-way near Cody by The Texas Co. Supposition is that this is for refinery and tank farm, although the company has made no announcement. The Texas Co. also recently acquired approximately 1,000 acres of leases in the field, through its Rocky Mountain subsidiary, Texas Production Co.

Another company recently active in acquiring acreage is the Producers & Refiners Corp. which closed a deal late in June with a syndicate of Basin, Wyo., people who held several government permits. The result of acreage trades and payment of cash bonus by the P. & R. gives the latter a large amount of well located acreage in checkerboard form.



Executives of the Prairie Oil & Gas Co. of Wyoming came in a crowd to inspect Oregon Basin. From left to right they are C. G. McCoy, general superintendent; Judge P. W. Metz, of Basin, Wyo.; J. Scott Blair, purchasing agent; Arthur G. Dana, vice president and general manager; O. E. Garretson, treasurer

Main pump station of the Illinois Pipe Line Co. in the Oregon Basin field

This field is a discovery of the Ohio Oil Co., so far as its present producing horizon is concerned, although a large number of shallower tests had been drilled on structure, finding gas and showings of oil. It is about 15 miles southeast of Cody, a town well known to tourists. Cody is the terminus of a branch line of the Burlington from Frannie, Wyo. and is about 50 miles from the east entrance to Yellowstone Park.

The Oregon Basin field is located on two domes with a structural sag between, although one well drilled in this depression found evidence of oil

saturation. The anticlinal fold is in Twps. 50, 51 and 52N., Rs. 100 and 101W. It is on the west side of the Big Horn basin. The surface formations are upper Frontier, of Cretaceous age (the Wall Creek sandstones, productive in Salt Creek, are of Frontier age) and these surrounded by Torchlight sandstone.

This basin is a large one, being

Two more of the Producers & Refiners Corp. Left, E. C. Wagner, gas superintendent; right, E. H. Aderton, general superintendent

about 11 miles long and six miles wide. It is limited by large escarpments of Mesaverde sandstone on the north and south, these being absent on the east and west sides. The lowest beds exposed on the two domes include those from 100 to 120 feet below the top of the Frontier formation. The Cody shale underlies a large area in the basin.

THERE is maximum dip of about 50 degrees along the east flank of the south dome and 34 degrees on the west side. Available observations of dip indicate that the south dome merges westward into a distinct anticline. West of the north dome the beds dip abruptly into a syncline.

Gas was first found in the Frontier formation, in a sandy zone near the base of the Thermopolis shale, in the Cloverly (Dakota-Lakota) beds and in a sand near the top of the Morrison or Sundance above the red beds. This development took place over a period of years, beginning in 1912. The Cleverly supplied the most gas and production from this horizon supplies the town of Cody with fuel. The Ohio Oil Co. controls the gas company.

Two years ago the Ohio Oil Co. started a test in the NW NE of 8-51N-100W surface elevation 5,288 feet. Production was found at depth of 3,350 feet in the Embar lime, which overlies the Tensleep sand. Both these members are of Carboniferous age. The discovery well created considerable excitement and was rated—by popular report—at 25,000 barrels.

It is now considered as a 1000-barrel well. This well was drilled to total depth of 3,585 feet, a few feet in the Tensleep sand, which developed water. This is on the northern of the two domes. On the south dome such drilling as has been done indicates that the Tensleep sand does not carry water.

THE pay zone in the Embar lime is described as rough, rounded grains of sand, with cementing material absent and of a maximum thickness of 240 feet. It has about 26 per cent pore space and saturation of about 24 per cent. Indications are that it will be long lived production, but that

This pair were talking serious business on the piazza of the Irma hotel, in Cody. On the left is Ralph E. Wertz, vice president of the Producers & Refiners Corp., with Ray Phebus, of the Oil Fields Power Co.

the flowing life of most wells drilled will be short.

As of the time this is written, the completions have been as follows:

Of the above named wells, that of the Orchard Oil Co. and the Ohio's No. 1 Baston are on the south dome, proving it for production. The well of the Wyoming Western is in the structural saddle between the two domes and around this well is the acreage recently purchased by the Texas Production Co.

The biggest fillip given to the field recently is the well of the Producers & Refiners Corp. It extended production to the north on the north dome. It found the top of the Embar lime at 3,151 feet, got first oil at 3,177 feet and stopped at 3,195 feet where it was shut in after flowing over the top of the casing. Like other wells in this field, it did not come in with a spectacular flow, but it showed more gas than some others. There was no tankage at the location and production test was delayed until the company could bring some from Salt Creek. The high structural position of this well—it ran nearly 200 feet higher than the discovery well of the Ohio Oil Co. one and one-half miles due south—is imposing, although it may be due in part to faulting.

Despite the advertising the field has received, not much oil has been marketed. For this year a total of 61,678 barrels had been shipped by tank car to refiners in Wyoming and Montana up to June 1. Runs from the field totaled 81,533 barrels. Refiners who have bought varying amounts of the oil include the International refinery, at Sunburst, Mont.; Maple Leaf Refining Co. at Coutts, Alberta; Arro Oil & Refining Co., Lewistown, Mont.; White Eagle Oil & Refining Co., Casper; the Russel refinery at Butte, Mont., and three or four others. The only company which has marketed oil is the Cody Petroleum Co., commonly known as the S. C. Ferdig interests. This company continues to produce its wells and it probably will force action on the part of some one else in a short time. Other pipe line outlets will have to be provided.

The reluctance of most companies to develop at this time is based not alone upon the difficulty of providing market but upon the high cost of the

R. H. Baillie and W. B. Stamford, of the National Supply Co., snapped in the Oregon Basin field

wells. Some of those that have been completed ran very near $100,000 total cost. The following can be figured as about the average:

84-foot wood rig, with steel bull wheels and 6-in. rig irons $4,500.

Casing:

200 feet of 20-in.

850 feet of 15½-in.

D. L. Mills, drilling contractor and L. D. Williams, Casper district manager of the Continental Supply Co.

1200 feet of 12½-in.	
2400 feet of 10-in. 45 lb. seamless.	
2800 feet of 8¼-in. 32 lb. seamless.	
3650 feet of 6¼-in.	
Total	$20,000
Fuel and water at $25 per day	3,750
Contract at $7.50-$8.50 per foot	30,000
Cementing 8¼-in., digging slush pit, teaming, water and gas lines	15,000
Total	$73,250

That is a representative estimate on cable tool drilling with steam. Considerable of the drilling is now being done with rotary, using electric power supplied by the Oil Fields Power Co.

Another interesting cost figure concerns one item in rotary drilling. Classification of the different expenses shows that it costs an average of $2.44 per foot for steel alone—bits—for an average depth of 3,420 feet. This includes nothing but the steel—no labor, fuel, depreciation or other charges being figured in.

Fastest time yet made in the field in completing a well was 101 days of which 45 days were actual drilling time. On this well delays for various reasons, took up 19½ days.

While they were a little slow in getting in, believing that the development of the field would be some time off, supply companies now are opening or have opened stores at Cody. The National, Oil Well, Continental, Marion Machine, Keys Tank Co. and the Great Northern Tool & Supply Co. all have yards and stores and the Great Northern and Oil Well have shops in the field.

Various analyses of the Oregon Basin oil have shown different results. One sample of the oil from Cody Petroleum Co.'s well in the NE SE NE of 7-51-100 showed the following results:

Crude Characteristics

Gravity	21 A. P. I.
Color	Black
Odor	Asphaltic & Sulfur
Water	5.6%
B. S. and Water	4.6%
Vis. @ 77	61
Vis. @ 122	23
Sulfur	3.46

Yields

Gasoline	17.5 %—59.4°	A.P.I.
Kerosene	7.75%—38.5°	A.P.I.
Bottom	67.5 %—13.1°	A.P.I.
Water	5.40%	
Loss	1.85%	

Committee is Planning Refinery Sessions

CLEVELAND, July 13.—A program committee comprising well known technologists from all refining centers of the country has been named by the general committee on refinery technology of the American Petroleum Institute to plan the refinery group sessions of the annual meeting of the Institute to be held in Chicago Dec. 4-6, 1928. Papers or discussions for presentation at these group sessions may be submitted to any member of the committee.

The executive sub-committee on program consists of E. W. Isom, Sinclair Refining Co., chairman; N. E. Loomis, Standard Oil Co. of New Jersey; R. P. Anderson, technologist American Petroleum Institute; T. G. Delbridge, Atlantic Refining Co.; K. G. Mackenzie, The Texas Co., and J. B. Rather, Standard Oil Co. of New York. The first three members of this sub-committee are, respectively, chairman, vice chairman and secretary of the Institute's general committee on refinery technology.

District members of the committee are:

Atlantic coast:

D. T. Brandt, Henry L. Doherty Co.; L. W. Parsons, Tide Water Oil Co.; W. D. Mason, Sun Oil Co.

Appalachian:

H. S. Bell, consulting engineer; W. S. Zehrung, the Pennzoil Co.

North Central:

E. C. Herthel, Sinclair Refining Co.; R. C. Osterstrom, Pure Oil Co.; R. E. Wilson, Standard Oil Co. of Indiana.

Mid-Continent:

H. W. Camp, Empire Oil & Refining Co.; E. R. Lederer, Texas Pacific Coal & Oil Co.; W. F. Rittman, Skelly Oil Co.

Gulf Coast:

J. T. B. Bowles, Crown Central Petroleum Corp.; S. P. Coleman, Humble Oil & Refining Co.; R. P. Russell, Standard Oil Co. of Louisiana.

Rocky Mountain:

A. D. David, Continental Oil Co.; S. H. Diggs, Midwest Refining Co.

Pacific Coast:

R. A. Halloran, Standard Oil Co. of California; R. E. Haylett, Union Oil Co. of California.

Coming Meetings

Michigan Oil Men's Association, Detroit Mich., July 26, 27.

Illinois Petroleum Marketers Association, Soengataha Country Club, Galesburg, Ill., Aug. 16.

Ohio Petroleum Marketers Association, Commodore Perry Hotel, Toledo, O., Sept. 5, 6, 7.

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 19, 20, 21.

North American Gasoline Tax Conference, Peabody Hotel, Memphis, Tenn., Oct. 1, 2, 3.

National Safety Council, Petroleum Section, Hotel Pennsylvania, New York City, Oct. 1 to 5.

American Oil Men's Association, Hotel Statler, Detroit, Mich., Oct. 9, 10, 11.

International Petroleum Exposition, Tulsa, Oct. 20 to 29.

Petroleum Refiners Division National Association of Credit Men, Chicago, Nov. 4, 5, 6.

American Petroleum Institute, Stevens Hotel, Chicago, Dec. 4, 5, 6.

New Atlantic Plant in Texas Unconfirmed

HOUSTON, July 17.—Newspaper reports that the Atlantic Refining Co. is considering the building of a major plant on the Texas Gulf coast lacked confirmation after a trip to the Houston and Beaumont districts by officials from Philadelphia headquarters this week.

Building of a Gulf coast refinery is, however, a possible outgrowth of previously announced plans of the Atlantic Pipeline Co., a subsidiary, to build a 528-mile pipeline from Midland, west Texas, to the Gulf coast. At present the Atlantic maintains a terminal for loadings of crude on tankships at Atreco, in the Beaumont district.

How Important Petroleum Tests Are Applied and What They Show

HEREWITH is published the second part of the treatise on "Significance of Tests" put out by Committee D-2 of the American Society for Testing Materials. This is the first time so far as we know when an authoritative body of petroleum technologists has undertaken to describe the purpose of the various tests prescribed for petroleum products, and tell what bearing these tests have on the quality of the product and its suitability for various purposes. The first part was published on page 60 of the July 11 issue of NATIONAL PETROLEUM NEWS. *The entire book will be published in serial form in* NATIONAL PETROLEUM NEWS *by special permission. Tests discussed, besides gravity, covered last week and color, cloud and pour and*

COLOR

THE color of petroleum products is described and defined in terms of color by reflected light or by transmitted light. For the former there is no accepted quantitative measure, so that numerical units of color are based on determinations by transmitted light.

Color by transmitted light is determined in two ways:

1. Depth of oil required to match a given color standard.
2. Color standard required to match a given depth of oil.

The common commercial methods do not measure true color in its scientific sense but are largely the result of adaptation and development of simple methods originally devised to give an idea of color for comparative purposes.

The petroleum products on which color measurements are made range from those which are practically colorless to those which appear opaque when examined in the neck of a 4-ounce oil sample bottle. Commercial usage divides these products into two general classes:

1. So-called "white" products, which range from practically colorless to "pale-straw."
2. "Pale-straw" and darker.

Instruments Suitable for "White Products"

The society selected the Saybolt chromometer (Tentative Method of Test D 156-23 T)[1] for the measurement of color of "white products." Color is determined in this method by measuring depth of oil necessary to match a standard color glass.

1 *Proceedings*, Am. Soc. Testing Mats., Vol. 23, Part I, p. 682 (1923); also 1927 Book of A. S. T. M. Tentative Standards, p. 407.

Other instruments used for measuring color of the same class of products are the Stammer and the Lovibond, but neither of these has been standardized by the Society.

The class of products to which the Saybolt chromometer is applied includes: (1) naphtha; (2) illuminating or burning oils; (3) pharmaceutical and technical oils; and (4) paraffin wax.

Significance of Results: Color is of definite importance in case of dry cleaners' naphtha because it is essential that the naphtha be free from material which may discolor fabrics. It is also an essential quality in those cases where the naphtha is to be used as a thinner for colorless or practically colorless products.

The importance of color of a burning oil must be considered as a variable. The true index of quality of a burning oil is furnished by a burning test and color, even within wide ranges may have very little effect except as it may indicate contamination if original color at time of manufacture is known. Minor differences in color do not indicate any difference in burning quality. Other physical and chemical properties are of far greater importance.

Some of the uses of pharmaceutical and technical white oils require that they be water-white or nearly so. In general other requirements, such as taste and odor, necessitate a degree of refining which insures a water-white color.

Color of wax is important and existing color requirements are based practically entirely on the experience of the user. The color of wax is always determined on the molten wax. At the present time the Society has not standardized any method for color measurement of wax and the Lovibond scale is frequently used.

Instruments Suitable for "Pale-Straw" and Darker Oils

The society selected the Union colorimeter (Tentative Methods of Test D 155-23T[1] and D 218-25T[2]) for the measurement of color of the "pale-straw" and darker products. Measurement of color by this instrument depends upon matching the color of a given depth or thickness of oil with the various color standards. In some cases where the oil is darker than the darkest color standard, provision is made for measuring the color under standardized conditions of dilution.

1 *Proceedings*, Am. Soc. Testing Mats., Vol. 23, Part I, p. 677 (1923); also 1927 Book of A. S. T. M. Tentative Standards, p. 397.

2 *Proceedings*, Am. Soc. Testing Mats., Vol. 25, Part I, p. 713 (1925); also 1927 Book of A. S. T. M. Tentative Standards, p. 402.

Other instruments commonly used for measuring color of the same products are the Tag-Robinson and the Lovibond. For their own purposes some refiners have devised instruments of more or less merit.

The class of products to which the Union colorimeter is applied includes: (1) spindle oils; (2) engine oils; (3) filtered cylinder oils; and (4) petrolatums.

Significance of Results: The chief significance of color as applied to this class of products lies in the fact that it is a generally accepted index of the uniformity of a given grade or brand.

Pale color is important in the case of oils used in the textile industry where staining of fabrics must be avoided.

Petrolatums for the pharmaceutical trade and manufacture of cosmetics should be of pale color to prevent staining.

Color requirements of lubricating oils are frequently over-emphasized as color does not necessarily indicate quality. A fallacy which is prevalent among consumers is that pale color indicates low viscosity.

Color requirements, by the user, should not be made any more stringent than the service demands. Adherence to this principle tends toward lower prices and conservation of natural resources.

CLOUD AND POUR POINTS

PETROLEUM oils become more or less plastic solids when sufficiently cooled, due either to partial separation of wax or to congealing of the hydrocarbons composing the oil. With some oils the separation of wax becomes visible at temperatures slightly above the solidification point, and when that temperature is observed, under prescribed conditions, it is known as the "cloud point." With oils in which wax separation does not take place prior to solidification, or in which the separation is not visible, the cloud point can not be determined. That temperature at which the oil just flows under prescribed conditions is known as the "pour point," irrespective of whether the cloud point is observable. Oils vary widely in these characteristics depending upon the source of the crude oil from which they are made,

upon the grade or kind, and upon the method of manufacture.

Scope of Method: The A. S. T. M. Tentative Method of Test for Cloud and Pour Points (D. 97-27T)[1] prescribes conditions for the determination of these points. The test for cloud point should be used only for oils that are transparent in layers 1½ inches thick. The test for pour point can be used for all petroleum oils. For cylinder stocks and black oils, a special pour point procedure is required, and minimum and maximum values are recorded.

Significance of Results: The cloud point is of value when the oil is to be used in wick-feed service, or when a haze or cloud in the oil above a given temperature would be objectionable for any reason. However, the test may give misleading results if the oil is not dry, due to the separation of water, and the test should always be interpreted with this fact in mind. In general, the cloud point is of more limited value and narrower range of application than the pour point.

The pour point gives an indication of the temperature below which it may not be possible to pour or remove an oil from its container, or below which it might be dangerous to use the oil in gravity lubricating systems, where the head tending to produce flow is small. However, it should be borne in mind that the size and shape of the container, the head or force exerted upon the oil, and the nature of its physical structure when solidified, all have an effect upon its tendency to flow. Accordingly, it is self-evident that no single test can be devised which can be taken as a positive and direct measure of the performance of an oil under all conditions of service, and the pour test should be regarded as giving only an indication of what may be expected.

Consequently, cloud and pour points should be interpreted in the light of actual performance under the particular conditions of use.

MELTING POINT OF PARAFFIN WAX AND PETROLATUM

THE melting point of paraffin wax is the temperature at which it changes from a liquid to a solid state. The melting point of petrolatum is the temperature at which it changes from a solid to a liquid condition when the determination is made according to the prescribed A. S. T. M. method.

Scope of Method: The A. S. T. M. Method of Test for Melting Point of Paraffin Wax (D 87-22)[2] involves cooling a sample of melted wax under specified conditions and noting the temperature at which a minimum rate of temperature change occurs.

Other methods for determining the melting point of paraffin wax involving the same general procedure as the A. S. T. M. method and yielding practically identical results have long been in use; among these are the Saybolt method and the so-called English method. The so-called "American melting point" is a figure arbitrarily taken as 3 degrees F. higher than the A. S. T. M. melting point.

The A. S. T. M. Method of Test for Melting Point of Petrolatum (D 127-24T)[1] involves warming a sample of petrolatum, which has previously been applied as a coating to a thermometer bulb, under specified conditions and noting the temperature at which the petrolatum becomes sufficiently fluid to leave the bulb.

Significance of Results: The methods are used by refiners in controlling manufacture and by consumers in specifying the material desired. In general, melting point parallels hardness and it is frequently used as a substitute for a hardness test.

VISCOSITY

THE viscosity of a fluid is the measure of its resistance to flow. In scientific work, viscosity is measured in terms of a unit of force designated as the "poise,"[1] while in most commercial work, an expression involving the time required for a measured volume of oil to flow, under specified conditions, through a carefully standardized tube, is known as the viscosity of the oil. To distinguish between these two methods of reporting results, the expression "absolute viscosity" is applied to an observation expressed in poises, while that expressed in terms of time of flow is designated as "viscosity," qualified, of course, as to instrument and temperature.

It is desirable, in commercial testing, that the time of flow be approximately proportional to absolute viscosity, and in order that this relationship may exist, it is necessary that the rate of flow through the tube shall not be too rapid. On the other hand the rate of flow cannot be too slow, on account of the excessive length of time required to make a test. Consequently the range of viscosity for which any particular tube can be used satisfactorily is limited as compared with the viscosity range of liquids of commercial interest in the petroleum industry, as indicated in the following tabulation:

Liquid	Approximate absolute viscosity at room temperature, poises
Hexane	0.003
Commercial gasoline	0.006
Water	0.01
Kerosene	0.02
Straw oil	0.4
Automobile lubricants	1 to 10.
Cylinder stocks	40.
Heavy fuel and road oils	100. plus

In practice, at least three different instruments must be employed in commercial testing: one for light distillates, one for lubricating oils, and one for heavy fuel and road oils, and actually there are two or more instruments available for each of these ranges. As previously stated, the viscosity of the oil is ordinarily expressed in terms of time, and where absolute viscosity is required, as, for example, in calculating rate of flow through tubes or pipes, or friction in a bearing, conversion into poises must be effected. Tables or curves for this conversion are available for practically all these instruments.

As viscosity changes rapidly with temperature, a numerical value of viscosity has no significance unless both the temperature and the instrument are specified. For comparative purposes, it is desirable that tests should be made at standard temperatures, as it is difficult to make conversions accurately from one temperature to another.

With certain substances, such as petrolatum, greases, and many oils containing soaps, the rate of flow is not proportional to pressure over any part of the range, the flow per unit pressure being unduly small at the lower pressures. In such instances, the term viscosity is meaningless and these substances should be considered as plastic solids rather than as viscous liquids. They are discussed in the section on consistency to be published later.

Scope of Commercial Viscosimeters: (*a*) *Instruments Suitable for Lubricating Oils.*—The Saybolt universal viscosimeter[1] (A. S. T. M. Standard Method of Test D 88-26[2]) is now used almost universally in the United States for the determination of the viscosity of lubricating oils. On the lighter oils the measurements are made at 100 degrees F. or 130 degrees F., and on the more viscous oils at 210 degrees F. The instrument gives reliable results at any temperature between about 31 degrees F. and 210 degrees F., providing the oil is not near its solid point or its flash point. Above 210 degrees F., radiation losses become so large that the results are not satisfactory, and recourse must be had to instruments such as the Ostwald type of viscosimeter, described by Bingham, which can be completely

1 *Proceedings*, Am. Soc. Testing Mats., Vol. 27, Part I, p. 919 (1927); also 1927 Book of A. S. T. M. Tentative Standards, p. 390.

2 1927 Book of A. S. T. M. Standards, Part II, p. 409.

1 *Proceedings*, Am. Soc. Testing Mats., Vol. 24, Part I, p. 872 (1924); also 1927 Book of A. S. T. M. Tentative Standards, p. 416.

2 For a detailed mathematical discussion of viscosity, see E. C. Bingham, "Fluidity and Plasticity," (McGraw-Hill) 1922; also W. H. Herschel, *Journal*, Soc. Automotive Engrs., Vol. 10, p. 31 (1922).

1 For conversions to absolute viscosity see report of Committee on Viscosity Standards of the American Petroleum Institute (1922-1924).

2 1927 Book of A. S. T. M. Standards, Part II, p. 427.

immersed in a high-temperature bath.

It should be emphasized that Saybolt viscosities, which are expressed in seconds, are not even approximately proportional to absolute viscosities except in the range above 200 seconds. As the time of flow decreases, the deviation becomes more and more marked and below 40 seconds the departure is so great that the use of Saybolt seconds as an index of absolute viscosity is very deceptive. Thus, an oil with a viscosity of 35 seconds Saybolt has about twice the absolute viscosity of one which gives a reading of 32 seconds Saybolt, and even the very lightest liquids do not give readings below about 28 seconds Saybolt. The instrument should preferably not be used on oils reading below 40 seconds, and never on oils below 32 seconds.

Other viscosimeters covering the same general range but not standardized by the society are the Redwood No. 1, the Barbey, and the Engler instruments.[3] These viscosimeters are in general less completely standardized both as to the instrument and the details of operation than the Saybolt Universal viscosimeter.

(*b*) *Instruments Suitable for Heavy Fuel and Road Oils.*—The Saybolt Furol viscosimeter (A. S. T. M. Standard Method of Test D 88-26[1]) is applicable to and generally recommended for the determination of the viscosity of heavy fuel and road oils. The temperature usually employed is 122 degrees F. Readings above 100 seconds are roughly one-tenth of those of the standard Saybolt instrument on a given oil at a given temperature.

Other instruments used for the same products but less completely standardized are the Redwood admiralty and the Engler.[2] The Redwood admiralty instrument is quite generally used in England, while the Engler was very generally used in this country on heavy oils prior to the development and standardization of the Saybolt Furol instrument.

(*c*) *Instruments Suitable for Gasoline and Kerosene.*—The Saybolt thermo-viscosimeter[3] and the Ubbelohde viscosimeter[4] are used for the determination of viscosity of very light distillates, such as gasoline and kerosene. The former instrument is rather generally used by oil refineries, but cannot readily be standardized in terms of absolute viscosity. The latter is theoretically of a better type but is very little used in this country. Neither of these instruments has been standardized by the society.

Significance of Results: The significance of viscosity depends upon the purpose for which the oil is to be used.

For *lubricating oils* viscosity is the most important single property. In a bearing operating properly, with a fluid film separating the surfaces, the viscosity of the oil at the operating temperature is the property which determines the bearing friction, heat generation, and the rate of flow under given conditions of load, speed, and bearing design. The oil should be viscous enough to maintain a fluid film between the bearing surfaces, in spite of the pressure tending to squeeze it out. While a reasonable factor of safety is essential, excessive viscosity means unnecessary friction and heat generation.[5] Since the rate of change of viscosity with temperature varies with different oils, viscosity tests should in general be made at that standard temperature which approximates most closely the temperature of use.

For *industrial fuel oils* viscosity is of importance mainly in determining the ease of atomization in a given type of burner, and the conditions as to temperature and pressure required to supply the oil to the burner. Gravity is incorrectly used as a basis for classifying such oils with respect to viscosity.

For *road oils* viscosity largely determines the rate of distribution by a given apparatus at a given temperature, and influences the rate of penetration into a given road surface. The determination of viscosity should, therefore, be made at the standard temperature approximating that of application.

For *illuminating oils* viscosity plays only a moderate part in determining the rate of flow through a wick. The value of the test is mainly in eliminating oils of abnormally high viscosity which would not flow properly through wicks of lamps and burners of ordinary design. There is also some indication that oils of very low viscosity will give unsteady flames. The performance of burning oils is influenced less by viscosity than by tendency to attack or incrust the wick. An actual burning test is the best method of determining the quality of illuminating oil as it indicates the combined effect of all of the important properties.

For *motor fuels* viscosity has little, if any, practical significance. While changes in the viscosity of a motor fuel affect the richness of the mixture supplied in certain types of carburetor, in others the difference is negligible. As a rule the differences in mixture between different fuels of proper distillation range are much smaller than the differences produced by ordinary temperature variations.

In conclusion, viscosity should sometimes be considered in connection with various products for special uses. For example, whenever the ease or rate of circulation of an oil is important, as in the case of transformer oils or oils for circulation in heat-carrying systems, viscosity becomes a factor of practical significance. This is also true of oils which must penetrate or saturate porous material. Viscosity is also of importance in designing pipe lines and oil heat exchangers.

Globe To Operate Two Additional Plants

TULSA, July 16.—Globe Oil & Refining Co. interests have taken over the operation of two refineries in Oklahoma. One is the 10,000-barrel skimming plant of the Sinclair Refining Co. at Cushing, and the other is the Tonkawa Petroleum Co.'s 2500 barrel skimming plant at Tonkawa.

The old Sinclair plant at Cushing is being put in shape for operations under the direction of O. D. Gurley who has been superintendent of the Globe's plant at Blackwell. It will be ready for operation about Aug. 1.

A company to be known as the Globe Oil & Refining Co. of Delaware, will operate this plant although the control and sales activities will be carried on by the same personnel as that of the Oklahoma corporation.

The Tonkawa plant has been undergoing repairs since a recent minor explosion. Operations were started on July 15 and the plant will be running on regular schedule within the next few days. This is also a Globe company but will be known as the Northwestern Refining Co.

Sales offices of the Globe are at Tulsa under the direction of Albert E. Landsittel. General offices are at Blackwell.

P. E. Slater, formerly superintendent of the Champlin plant at Enid has been made superintendent of the Blackwell plant following the transfer of Mr. Gurley to Cushing.

3 For conversion to absolute viscosity see W. H. Herschel, *Journal*, Soc. Automotive Engrs., Vol. 10, p. 31 (1922). For details of operating the Redwood instruments see Standard Methods of Testing Petroleum and Its Products, Inst. of Petroleum Technologists, p. 49 (1924).

1 1927 Book of A. S. T. M. Standards, Part II, p. 427.

2 For conversion to absolute viscosity see W. H. Herschel, *Journal*, Soc. Automotive Engrs., Vol. 10, p. 31 (1922). For details of operating the Redwood instruments see Standard Methods of Testing Petroleum and Its Products, Inst. of Petroleum Technologists, p. 49 (1924).

3 A. R. Fortsch and R. E. Wilson, *Industrial and Engineering Chemistry*, Vol. 17, p. 281 (1925).

4 W. H. Herschel, *Proceedings*, Am. Soc. Testing Mats., Vol. XIX, Part II, p. 676 (1919).

5 For a quantitative discussion of the effect of various factors on the viscosity required to lubricate journal bearings see R. E. Wilson and D. P. Barnard, "The Mechanism of Lubrication," *Journal*, Soc. Automotive Engrs., Vol. II, p. 49 (July, 1922).

Business Men Continue Taking Up Slack In Industry and Commerce

By F. M. Feiker*

MERGERS and consolidations, apparent discounting of the old prejudice of poor business in a Presidential year, unexpected gains in some lines, sharp retrenchments in others, normal business in general on the 1927 level and co-operative group attacks upon common business problems, mark the first six months of business for the year 1928.

Business men in key industries, trades and technical professions, reporting through the editors of their respective business publications for the first semi-annual survey of business conditions undertaken by the National Conference of Business Papers Editors and the Associated Business Papers give these as the outstanding trends of business for the first half of the current year.

The steel industry by high specialization in developing many small volume markets has completely taken up the slack of a greatly reduced volume of steel orders by railroad. The meat packing industry has enjoyed a larger volume of business and a strong domestic and foreign market. The automobile industry, save Ford, is going ahead of expectations and should finish the year about on a par with or better than 1927, with manufacturers much nearer the solution of the used car problem.

Editors in all lines report no important decreases in wages, some slight rise in specialized industries and individual shortage of highly skilled mechanics. Total payrolls, on the other hand, are considered a little below those of the first six months of 1927, due to more automatic machines.

Another interesting side light is the expansions that have been made in service industries, notably the hospitals and the restaurants. These industries have greatly increased their total number of employes. There has been a distinct flow of labor from producing industries into service work, providing employment for those who otherwise would be unemployed. This trend is general, but as yet no statistics are available.

The editors are unanimous in reporting that the first six months of 1928 have been characterized by many desirable major and minor mergers, cooperative market finding activities and intelligent control of production.

The building and construction industries are outstandingly booming. In dollar volume these industries are far ahead of 1927, which was the largest year on record. Building and engineering construction for the first five months of the current year is nearly 25 per cent ahead of that same period for last year, and operations are being carried on in practically all sections of the country. The largest gain as to class of work is in commercial building, and as to geographical region, the Middle Atlantic States. Home building, however, is below last year.

THE accompanying summary of business conditions for the first half of 1928 and the business outlook for the last six months was prepared under the direction of the Associated Business Papers, Inc., and the National Conference of Business Paper Editors.

National Petroleum News is an active member of both organizations.

Construction costs, instead of skyrocketing, are holding remarkably constant, and wholesale and retail stocks of building supplies are reported to be 30 per cent below what they were a year ago. The outlook for the building industry is that gradually it will return to a new normal annual volume, almost twice as great in dollars as the average year of the pre-war level.

The electrical industry reports that the total production of electricity was about nine per cent greater for the first half of the present year than for the similar period of 1927. The railroads are credited with being efficiently operated and giving dependability and speed of service in freight shipments that surpasses all previous records, despite the fact that the volume of freight is somewhat less than that of 1926 or 1927.

The rubber industry, on the other hand, is reported to have suffered very greatly since the first of the year. The complete abandonment of the British rubber restriction policy caused the collapse of the crude rubber market, prices tumbling from 44 cents per pound to 17 cents, the lowest in years. American manufacturers were caught with excessive inventories of goods made of high-priced rubber and with commitments for over 100,000 tons of high priced crude rubber. Retail tire price reductions forced these manufacturers to write off a large depreciation on finished tires and tubes. This meant an actual physical cash loss of fully $75,000,000 to the industry.

The rubber industry is credited with starting to recover, although practically every manufacturer will show a substantial loss for the year. The organization of the American Rubber Institute under General Lincoln C. Andrews, former Federal Prohibition Director, will stabilize the industry and correct bad merchandising practices.

The textile industry is not as seriously depressed as rubber is considered to be in a condition of "profitless prosperity." Business for the first half of this year ranged from normal to depressed. Most divisions of the cotton and wool branches conditions are now decidedly sub-normal because of machine-hour productive capacity considerably above normal consumption and failure by manufacturers to balance production and consumption. In this industry, however, there is now more general economic cooperation between manufacturers that has resulted in the organization of the Cotton Textile Institute, the Wool Institute and plans for similar joint endeavors by the carpet and the upholstery manufacturers.

THE metal working industries have done considerable more new plant construction and new equipment buying, a condition which characterizes nearly all of the production industries of the country and efficiency of operation is generally conceded to be a trifle better than last year.

In the mercantile field the volume of trade is slightly ahead of 1927, but bad spots are reported in the coal regions and western farm states. Department store stocks are reported to be somewhat smaller, and in some sections customers are complaining that stores are chronically "just out." Chain dry goods stores are making steady growth, as is group buying by independent department stores. Both chain department stores and those independently operated are credited with normal business because of excellent sales efforts.

The furniture industry in both the

*Managing Director, The Associated Business Papers.

manufacturing and merchandising fields is slightly above the level for the first half of 1927. Whether or not the public accepts Art Moderne, furniture styles will have a very decided effect upon business in the fall.

The oil industry is stabilizing its operations to bring crude oil production more nearly in line with the demand for refined products. A marked decrease in oil operations in all but newly opened fields has resulted. Crude oil prices are practically the same as the close of 1927, with no material changes anticipated. Stocks of both crude and refined products have been increased but at a lesser rate than 1927, and the present supply and demand seems to about balance. Holding runs of crude oil to market demand has resulted in a two-cent advance in the wholesale gasoline price, but the retail price has not been advanced the country over.

Due to a serious over-built situation particularly in the larger cities, hotels are depressed and price cutting has appeared. It is predicted that many big city hotels will fail before the end of the year. In the ice cream industry, another service industry, costs have increased, due to competitive conditions, and margins of profit will probably be reduced. Despite this, the industry is normal and an increasing number of consolidations are anticipated. Bakers the country over are having normal business and are turning to cake making as the chief field open to them for permanent expansion. The volume of service rendered by hospitals was uniformly larger the first half of this year than last. Industrial and automobile accidents are steadily increasing.

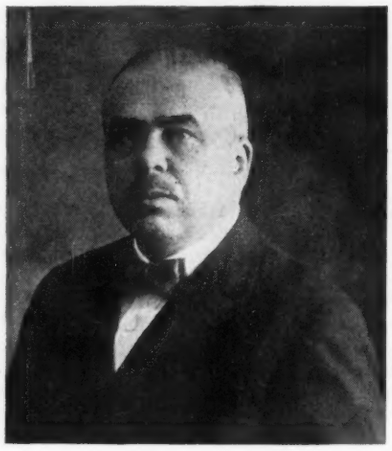
Both the wholesale and retail volume of trade in shoes has been below normal for the first half of 1928, but the outlook for the balance of the year is remarkably favorable. The public, it is held, is "short" on wanted styles and types of shoes, and there will be a distinct pickup in the early fall because of development of new materials for fall and winter shoes.

The lumber operations from the woods to the wholesale and retail lumber yards are gradually recovering from the depression of a year ago. The outlook is for higher market levels and more intensive sales promotion work, as well as a trend toward greater refinement of lumber products at the source of supply.

Correction

On page 83 of the June 13 issue of NATIONAL PETROLEUM NEWS, under "New Stations Building," it was stated that a chain of filling stations would be built in Nashville, Tenn. and other points by the Standard Oil Stores Co. The company that will build these stations is the Southern Oil Stores Co., and has no connection whatever with the Standard Oil Co. of Louisiana.

Standard (N. J.) Holland Manager Resigns



B. Kurpershoek, who has resigned as Holland manager of the Standard Oil Co. of New Jersey

SCHEVENINGEN, Holland, July 17—B. Kurpershoek, who has been with the Dutch subsidiary of the Standard Oil Co. of New Jersey at The Hague, Holland, since 1908, resigned as manager of the Petroleum Industry Co. in June. The Standard's subsidiary in Holland operates under that name.

From 1908 up to the outbreak of the World war, Mr. Kurpershoek acted as the Standard's agent in Holland, handling the forwarding and storage of lubricating oils and waxes which were going to the interior of Holland and Germany via Rotterdam.

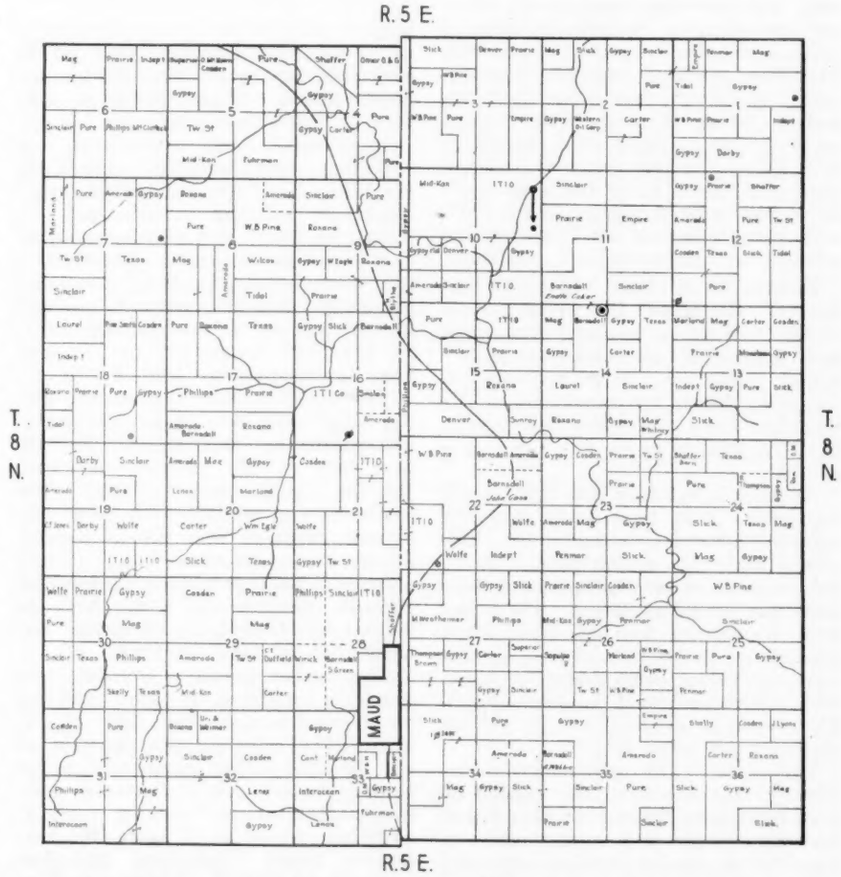
During the war he imported oils and waxes into Holland through the Dutch government and the Netherlands Overseas Trust.

With the establishment of the Petroleum Industry Co. at The Hague, in 1920, Mr. Kurpershoek was appointed manager for the sales of fuel, Diesel and lubricating oils and waxes; also asphalt, Gilbert & Barker gasoline pumps, Perfection stoves, and other products allied with the oil industry.

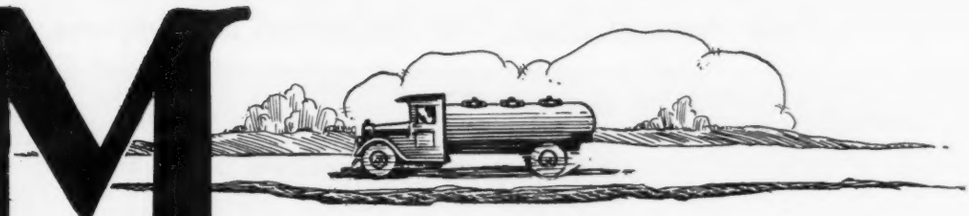
Mr. Kurpershoek plans to take a rest now and later to visit the United States.

Has New Sales Executives

HARRISON, N. J., July 16.—Leslie M. Brown, who was formerly with the Radel Leather Mfg. Co., Newark, has been appointed sales manager of the tanning oil division of the National Oil Products Co., with headquarters here.



Township 8-5, Pottawatomie and Seminole counties, Oklahoma, showing Barnsdall discovery well in Circle and Indian Territory Illuminating Co.'s new Wilcox producer indicated by arrow.
See story page 37



A Message to those who *have* NOT *yet learned* that the QUALITY *in* WHEATON Faucets · Valves · Fittings IS ECONOMICAL

THE first cost of any Wheaton Product is practically the *only* cost—upkeep is negligible. And because of the long period of service, free from trouble and repairs, Wheaton Faucets, Valves, Swing Joints, Couplings, Connections and other fittings *cost less* per year of satisfactory service.

Wheaton Products may cost more than ordinary makes—that is, the *first cost* may be more—but if they do cost more, it is because they are made of all bronze with *high copper content,* because *more care* and *skill* are used in their manufacture, because they are *more rigidly inspected,* and because they are given *more tests.*

Then, in a word, if Wheaton Products *cost more,* it is because they are *made better.* In fact, Wheaton is trying to make them so good that they will last *forever!* No Wheaton Product is made with one eye on replacement business.

Of all the thousands of Wheaton Faucets, Valves, Swing Joints, Couplings, Connections and other fittings which go into service each year, returns due to faulty construction, porosity or other defect, are practically unknown.

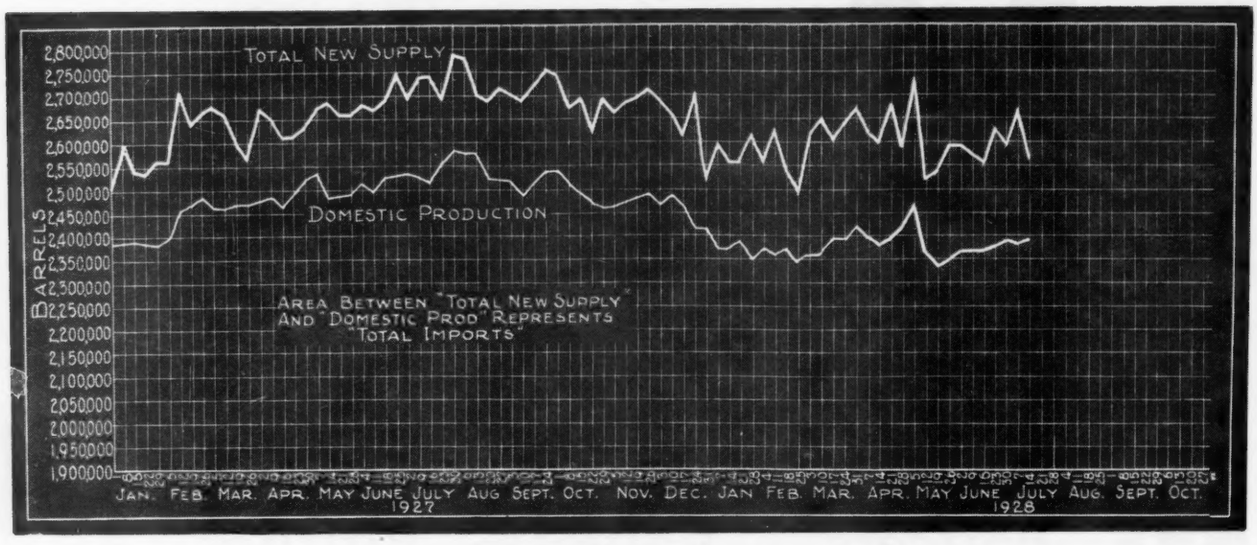
If you have not yet learned that the *quality* in Wheaton Products is *economical,* send today for a sample of any Wheaton Fitting, and test it to your own complete satisfaction.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors

Wheaton

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	July 14	July 7
Production east of Rockies	1,747,000	1,734,850
Increase		12,150
Total production in U. S.	2,391,500	2,383,850
Increase		7,650
Crude oil imports	173,429	284,143
Decrease		110,714
Total crude supply	2,564,929	2,667,993
***Decrease**		103,064

***In July 11 issue, a decrease in total crude supply was shown through error instead of increase. The figure was correct.**

	July 14	July 7
OKLAHOMA		
North Braman	3,050	2,900
South Braman	1,500	1,450
Blackwell	3,500	3,550
Hubbard	2,650	2,700
Thomas	1,300	1,300
Tonkawa	13,750	13,800
Garber	8,500	8,750
Burbank	30,800	31,750
Osage, outside Burbank	26,450	26,900
Watchorn	.....	.....
Cushing	19,700	19,700
Yale Jennings	8,000	8,150
Davenport	1,900	1,900
Bristow-Slick	21,650	21,900
North Okmulgee	15,000	15,050
Pearson	4,600	4,800
Lyons-Deaner	6,200	6,300
St. Louis	30,150	24,500
Stroud	.....	.....
Allen Dome	19,650	20,250
Cromwell	9,400	9,500
Papoose	4,250	4,200
Wewoka	6,300	6,400
Seminole	51,500	50,650
Bowlegs	57,500	58,150
Searight	11,950	12,700
Little River	41,200	41,500
Earlsboro	79,750	81,800
Duncan District	8,200	8,150
Graham	5,450	5,450
Fox	1,650	1,650
Healdton	14,100	14,100
Hewitt	9,400	9,450
Scholem Alechem	15,150	15,000
Others	49,900	49,650
Total, Oklahoma	584,050	584,000
Increase		50
KANSAS		
Greenwood County	28,400	28,500
Florence-Covert	1,050	1,200
Peabody-Elbing	3,250	3,350
Eldorado-Towanda	13,250	13,700
Augusta-Fox-Bush	3,700	3,900
Rainbow Bend	1,600	1,600
Russell	3,900	4,200
Churchill	10,400	10,400
Oxford	10,800	11,550
Others	26,000	25,200
Total, Kansas	102,350	103,600
Decrease		1,150
NORTH LOUISIANA		
Homer	4,400	4,350
Haynesville	6,150	6,250
Caddo, light	9,600	10,000
Caddo, heavy	3,200	3,400
De Soto, Red River	4,050	4,100
Elm Grove	600	600
Bellevue	850	850
Cotton Valley, light	1,200	1,600
Cotton Valley, heavy	4,400	4,100
Urania	7,800	6,850
Pleasant Hill	500	550
Total, North Louisiana	42,750	42,650
Increase		100
ARKANSAS		
El Dorado	5,400	5,250
Champagnolle	16,300	15,150
Smackover, light	7,600	7,650
Smackover, heavy	58,250	59,050
Stephens	1,000	1,050
Nevada	1,450	1,600
Lisbon	2,050	2,100
Others	100	100
Total, Arkansas	92,150	91,950
Increase		200
TEXAS (Outside Gulf Coast)		
Panhandle District		
Hutchinson County	35,900	35,850
Carson County	6,000	6,250
Gray County	20,250	20,850
Wheeler County	900	950
Others	200	300
Total, Panhandle District	63,250	64,200
Decrease		950
North Texas		
Burkburnett	10,500	10,500
Electra	13,400	13,300
Iowa Park and K-M-A	4,100	3,950
Wilbarger	22,100	22,300
Archer County	21,000	21,200
Montague-Cook	11,250	11,500
Others	650	650
Total, North Texas	83,000	83,400
Decrease		400
West Central Texas		
Stephens County	7,500	7,600
Eastland-Desdemona	8,000	8,150
Brown County	13,000	13,750
Coleman County	3,000	2,900
Callahan County	3,550	3,500
Shackleford County	10,500	10,000
Young County	8,250	8,300
Throckmorton County	900	900
Palo Pinto County	450	450
Jack County	1,350	1,350
Others	600	600
Total, West Central Texas	57,100	57,500
Decrease		400
West Texas		
Jones County	1,600	1,500
Mitchell and Scurry Counties	3,100	3,000
Howard County	5,700	5,400
Reagan County	18,400	18,350
Crane and Upton Counties	64,550	67,100
Crockett County	2,400	2,300
Pecos County	72,000	55,950
Winkler County	176,000	181,700
Others	1,700	1,750
Total, West Texas	345,450	337,050
Increase		8,400
East Central Texas		
Mexia	7,000	7,100
Currie	450	500
Richland	550	600
Wortham	1,800	1,900
Corsicana-Powell	11,000	11,050
Nigger Creek	1,050	1,100
Total, East Central Texas	21,850	22,250
Decrease		400
Southwest Texas		
Luling	13,500	13,600
Lytton Springs	1,000	1,100
Somerset	700	700
Laredo District	8,200	8,050
Piedras Pintas	1,200	.....
Dale	.....	1,250
Others	400	400
Total, Southwest Texas	25,000	25,100
Decrease		100
Total, Texas (outside Gulf Coast)	595,650	589,500
Increase		6,150
GULF COAST		
Coastal Texas		
West Columbia	8,400	8,150
Damon Mound	900	900
Big Creek	3,200	2,100
Boling	1,900	1,950
Blue Ridge	7,500	6,500
Pierce Junction	10,500	10,800
Humble	1,250	1,300
Goose Creek	6,900	6,800
South Liberty	4,400	4,500
Hull	10,400	10,900
Saratoga	1,100	1,100
Batson	1,450	1,400
Barber's Hill	800	900
Sour Lake	3,350	3,500
Spindletop	38,400	39,500
Orange County	4,100	4,150
Others	2,000	2,200
Total, Coastal Texas	106,550	106,650
Decrease		100
Coastal Louisiana		
Vinton	4,550	4,500
Sulphur Dome	4,700	5,000
Lockport	3,650	4,200
Sweet Lake	4,100	3,800
Evangeline	1,000	900
East Hackberry	6,950	5,650
Edgerly	1,100	1,100
Sorrento Dome	1,700	2,200
Others	1,000	900
Total, Coastal Louisiana	28,750	28,250
Increase		500
Total Gulf Coast	135,200	134,900
Increase		300
ROCKY MOUNTAIN		
Wyoming		
Salt Creek	39,800	34,850
Grass Creek	2,300	2,450
Elk Basin	1,000	1,300
Big Muddy	2,800	2,750
Lost Soldier	4,100	4,200
Rock Creek	2,700	2,600
Lance Creek	550	550
Teapot Dome	.....	.....
Others	7,050	7,150
Total, Wyoming	60,300	55,850
Increase		4,450
Montana		
Cat Creek	1,700	1,700
Sunburst	8,600	8,600
Others	150	150
Total, Montana	10,450	10,450
Colorado		
Moffat (Craig)	1,050	1,050
Fort Collins	2,500	2,600
Florence	1,300	1,250
Others	3,450	3,500
Total, Colorado	8,300	8,400
Decrease		100
New Mexico		
Table Mesa	450	.....
Hogback	200	200
Artesia	1,150	1,150
Rattlesnake	700	500
Others	200	200
Total, New Mexico	2,700	2,050
Increase		650
Total, Rocky Mountain	81,750	76,750
Increase		5,000
CALIFORNIA		
Santa Fe Springs	36,000	36,000
Long Beach	202,000	202,000
Huntington Beach	53,500	55,000
Torrance	17,000	17,000
Dominguez	11,500	11,500
Rosecrans	6,000	6,000
Inglewood	29,000	29,000
Midway-Sunset	71,000	71,500
Ventura Avenue	52,000	53,000
Seal Beach	35,000	35,500
Others	131,500	132,500
Total, California	644,500	649,000
Decrease		4,500
EASTERN		
(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	113,000	111,500
Increase		1,500

Water Softening Pays in the Oil Fields By Cutting Repair Costs

By John Power
N. P. N. STAFF WRITER

TULSA, July 18

SOFT water pays its way in the oil fields. Not in direct income, to be sure, but it does pay in a reduction of operating costs, shut down time saved, and in savings on general wear and tear on equipment.

One of the major operators in the Seminole district figured that $75,000 per year had been the cost of repairs to gas and gasoline engines. Hard water had been the direct cause of most of these repairs, as its use had resulted in scaled water jackets, and a few cracked cylinder heads, as well as the time and production lost while shut down for repairs.

Time lost in the oil fields is money lost. Time lost on a drilling well means the contractor is out of pocket for each minute that his tools and crew are not making hole. Time lost on a pumping well means production lost, for rarely will a well "head-up" enough to make up the production lost while the well was down. Many of these expenses due to time lost can and have been eliminated by treating the water supplied to drilling and producing wells.

The kind of water to be treated is the deciding factor in determining the type of water softener to be installed. For oil field installations the permanent type of softeners, such as a city would build, are naturally to be avoided. The water should be treated at the source of supply. Tests of the water should be made before hand and daily tests should be made to determine the efficiency of the treating plant.

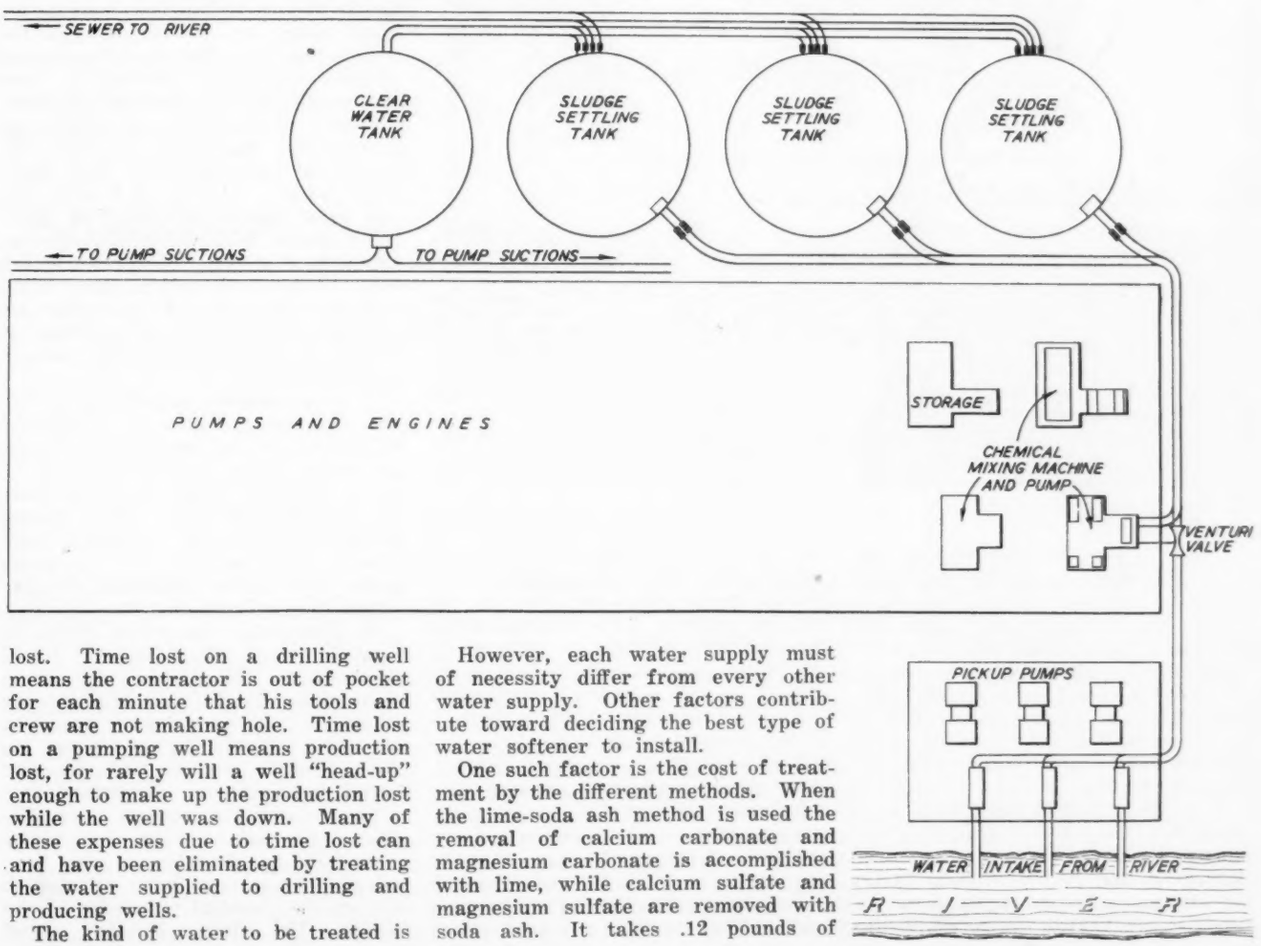
Clear well water can be, and often is, extremely hard. The zeolite process is recommended by filtration engineers for water of this type. Turbid water, such as is supplied by streams, or ponds is usually best handled by the lime-soda ash method.

However, each water supply must of necessity differ from every other water supply. Other factors contribute toward deciding the best type of water softener to install.

One such factor is the cost of treatment by the different methods. When the lime-soda ash method is used the removal of calcium carbonate and magnesium carbonate is accomplished with lime, while calcium sulfate and magnesium sulfate are removed with soda ash. It takes .12 pounds of lime to treat each 1000 grains of calcium carbonate; to treat 1000 of magnesium carbonate .32 pounds of lime is needed. One thousand grains of calcium sulfate is treated with .16 pounds of soda ash, while both lime and soda ash are required to treat magnesium sulfate, .12 pounds of the former and .16 pounds of the latter being required per 1000 grains. One half pound of salt per 1000 grains of any hardness is required.

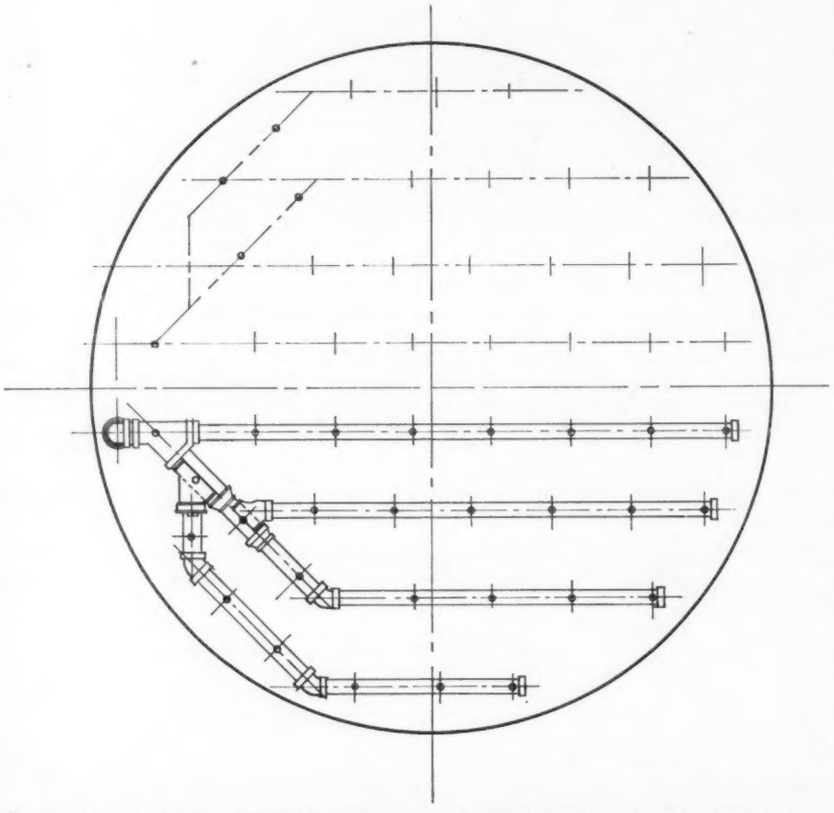
At present prices lime can be bought in car-load lots for 1 cent per pound; soda ash for 2.5 cents per pound, and salt for .35 cents per pound. The percentage of each of the chemical elements in the water is figured, multi-

Layout of the water softening plant being built by the Gypsy Oil Co. on the North Canadian river in the Seminole district. This plant will treat 12,000 barrels of water daily at an operating cost of $712.50 per month, with a building cost of less than $4000



plied by the amount of water to be treated, and the cost of treatment is then known. The cost of erection of a plant of the lime-soda ash type, varies of course, with the location, the topography of the site, etc. The plant illustrated herewith, which is being built by the Gypsy Oil Co. to serve its Little River development, will cost $3,360 when completed, and will have a treating capacity of 12,000 barrels per day.

When the zeolite process is contemplated the cost of the plant is estimated—a 12,000 barrel plant costs from $12,000 to $25,000, depending on location, site, construction, etc., the cost of the salt for regenerating the zeolite is computed, and the total cost determined.



Pipes laid in the bottom of the settling tanks to gather the sludge from the water treated at the plant the Gypsy Oil Co. is building on the North Canadian river, Southern Seminole county, Okla. The pressure of the water in the tank forces the sludge into the pipes through the vents. The pipes are cleaned by opening and closing the quick-opening valves on the drain

Other factors in determining the type of softener to be installed are: Sludge or sediment disposal and flexibility. The sludge from a lime-soda ash plant is a spent lime mixture, chemically harmless, but of a greater volume than that from a zeolite plant. The sludge from the latter is salt water, to be disposed of in the same manner as the salt water from the producing wells.

In a lime-soda ash plant such as is illustrated, the water is picked by the pumps from the river. It passes through a line to the settling tanks, the chemicals being admitted to the water at the Venturi valve, which also determines the rate at which the chemicals are admitted into the water, the pressure of the water as it passes through the Venturi automatically increasing or diminishing the size of the orifice in the valve.

The water is admitted to the tank at the bottom, in order to prevent the unnecessary disturbing of the sediment already in the tank. The sludge is precipitated to the bottom, and the water passes out of the settling tank at the top. It travels to the clear water tank, from which it is picked up and distributed throughout the field by the pumps at the station. Plants similar to this, which operate at a cost of a little over $700 per month, handle water with an initial hardness ranging from 18 to 25 grains per gallon, softening it to a point where no trouble is experienced at the drilling wells and very little at the gasoline plants. The softened water is used for drilling, as well as in the boilers and gas engines, it being cheaper to drill with the treated water than to build two water systems.

The chemical mixing machine rather closely resembles a washing machine. Two staggered paddles, actuated by a drive shaft through the center of the mixing tank, keep the chemicals agitated. A series of cups, set up on the same drive shaft, pass through the mixture, fill on the up stroke, pass over and empty into a funnel, which feeds the outlet pipe to the water, the Venturi controlling the rate of mixing. In addition to the lime and soda ash used, a little sodium aluminate is added to help coagulate the particles in the hard water, thus speeding up their precipitation.

The sludge which settles in the bottom of the settling tanks is gathered by a series of pipes in the bottom of the tank. The pressure of the water forces the sludge into the pipes through the vents provided for that purpose. By opening and closing the quick-opening valves on the drain pipes the pressure forces the sludge out of the gathering pipes and to the sewer. The flow of water is continuous, as the flow of treated water is from the top of the settling tanks to the clear water reservoir, making it unnecessary to shut down to drain.

In the zeolite process the water is pumped to the tanks in which the softening takes place by forcing the water either up or down. Chemicals are not used in the actual softening of the water by this method, the chemical process which takes place being really a base exchange. The zeolite retains the calcium and magnesium of a water passing through it, making the exchange with the element sodium stored up in the zeolite mineral.

While it is possible to undertake the softening process by moving the water either up or down through the zeolite tank, a downward movement of the water has a tendency to pack the zeolite, thus retarding the flow. The rate of flow is much greater by forcing the water up through the gravel at the base of the tank, through the mineral and into the soft water line through the flow measuring device, with which all softeners should be provided. The gravel at the base of the tank retains the zeolite mineral, preventing its passing out through the strainers. The gravel is usually of three grades, the coarsest at the bottom.

It is necessary to rejuvenate the zeolite at regular intervals. A 5-pound differential in the pressures at which the water enters and leaves the tank is a warning signal that the beds are becoming clogged. On a typical zeolite plant in the Tonkawa field, treated water which shows an eight-grain per gallon hardness is the signal for rejuvenating the mineral.

In this plant the water which is treated comes from wells. It is admitted to the treaters at about 35-38-grain hardness. After being treated it is taken off at a one-grain hardness, suitable for every use on the company's property. The cost per barrel for treatment is $.0118.

The rejuvenation process is accomplished by back-washing, that is, by reversing the direction of the flow, using a 5 per cent brine solution to restore the chemical properties to the zeolite. The softener is taken out of

operation temporarily. The brine solution is taken out of a reserve pit by an injector which regulates it to the 5 per cent solution.

This solution is forced through the bed, replacing the sodium taken out by the softening process. The excess salt is then washed to the sewer and the softener put back in operation. The rejuvenation process, which should take place about every eight hours when the softener is running to capacity, requires about 30 minutes. In the zeolite plant mentioned above the water must respond to an eight-drop test after rejuvenation. That is, when eight drops of a prepared soap solution are placed in 100 cubic centimeters of treated water a satisfactory lather should be obtained. Naturally the less soap required the better the water.

It would be difficult to estimate the savings from the use of softened water. The fact that many of the oil companies which have one plant soon install several is the best indication of the economies which are effected by softening the water for a place as hard-boiled as an oil field, where men and materials are built to stand the gaff.

Gypsy Test Running High In Lea County, N. M.

HOUSTON, July 12.—The structurally high position of the brown dolomite marker horizon drilled in the Gypsy Oil Co's. No. 1 state test, sec. 34-21S-36E, served to draw attention to southeastern Lea county, New Mexico, again last week.

The brown dolomite was topped at 3060 feet, or 502 feet above sea level. This is nearly as high structurally as the brown dolomite horizon in the No. 1 Sholes test of the Marland and California companies in 19-25S-37E, about 20 miles south and three miles east of the Gypsy drilling well.

The Sholes, which found top of the dolomite 515 feet above sea level, adjusted to the difference in surface elevation, is now drilling below 2820 feet, making 30,000,000 cubic feet of gas daily. Northeast of the Gypsy test, in 9-19S-38E, the Midwest Exploration Co.'s well is still shut down for tankage at 4084 feet. The Midwest Exploration Co.'s. well is still shut down for tankage at 4084 feet. The Midwest well is variously estimated capable of producing from 150 barrels of oil, and upwards, daily.

A map showing relation of these and other tests in southeastern Lea county appeared on page 24 of the July 4, 1928, issue of NATIONAL PETROLEUM NEWS.

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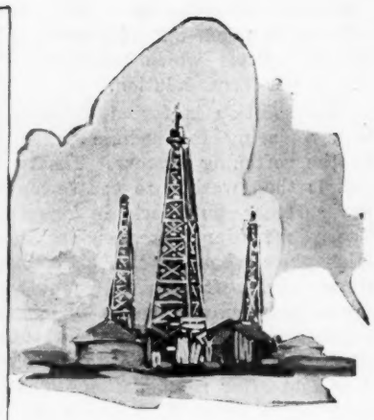

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Township 8-5 Gets Second Big Producer When I.T.I.O. Drills Into Wilcox

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, July 14

WITH little to stimulate the overheated operators in July's torrid weather for a couple of weeks except the deepening contest between the Magnolia Petroleum Co. and T. B. Slick, in Twp. 7-5, new interest in living was provided by the Indian Territory Illuminating Oil Co. on Friday, the thirteenth.

This company raised its already high percentage of wildcatting successes by stirring up things in Twp. 8-5, which is the township next west of that containing the Bowlegs pool and part of the Little River pool.

The area has been dormant for some time. Early in December the Barnsdall Oil Co. brought in its No. 1 Fife, in the NE NE NW of 14-8-5. It was good for an estimated 2,500 to 3,000 barrels per day as it was shut in. Little oil has been produced from it.

The I.T.I.O.'s new one is in the SE corner NE of 10-8-5. Topping the Wilcox at 7 o'clock the evening of Friday at 4,222 feet, it was drilled in one foot and with the pay thus barely scratched, flowed 686 barrels in the first 12 hours. The first hour's production was 43 barrels and the twelfth hour's flow was 59 barrels.

The company at this writing is deepening the well. When completed it will be shut in under the agreement adopted May 24, to 50 barrels a day and held in that condition until the first of the wells which may be started in the area after Aug. 15 is completed as a producing well.

The I.T.I.O. producer is less than a mile from the Barnsdall's discovery. Less than three miles southwest is a dry hole drilled some months ago by the I.T.I.O. company. It produces some oil from the Simpson lime, but the Wilcox yielded only water. Singularly, enough, this one and the Barnsdall's producer ran very nearly alike as to depths of various formations, getting the Wilcox sand only 14 feet differently, the I.T.I.O. well being the shallower.

The discovery well of the Barnsdall and the new producer of the I.T.I.O. compare structurally as follows:

Barnsdall Well Sec. 14-8-5
Elevation 941 feet.

Formation	Depth	Subsea Level
Hunton	4085	3144
Sylvan	4090	3149
Viola	4173	3232
Simpson	4236	3295
Wilcox	4291	3350

I.T.I.O. Well Sec. 10 8-5
Elevation 913 feet

Formation	Depth	Subsea Level
Hunton	3960	3047
Sylvan	3980	3067
Viola	4004	3191
Simpson	4153	3240
Wilcox	4222	3309

Just a half mile east of the Barnsdall's discovery is a Wilcox dry hole drilled by The Texas Co. this year. It ran away low, getting the top of the Wilcox at 4,730 feet.

In an earlier article* records of several wells around the edge of this township were given as having a bearing on the structure of the area. Several tests are under way in the township at this time which will contribute important information as to the extent and direction of the pool. These tests and their status at the close of the week were as follows:

Prairie Oil & Gas Co., NW NE NW of 12-8-5, rigging up rotary.

Gypsy Oil Co., SE NE 1-8-5, top of Mayes formation 3,945; cementing 8-inch pipe at 3,966 feet.

Gypsy Oil Co., SE corner NE of 7-8-5, 81 feet surface pipe set.

Pure Oil Co., SE SW SE of 18-8-5, 90 feet surface pipe set.

I.T.I.O. Co., SE corner, SW SW of 22-8-5, drilling at 3,620 feet.

An important development of the week was the opening to production of the Gypsy Oil Co.'s No. 1 Brown, in the SW SE of 33-8-6, west of Little River production about two miles. This well was drilled in early in May, 1927, produced 1,032 barrels open flow in 24 hours and was then pinched in to less than 100 barrels daily at which rate it has been operated for the more than a year period since completion.

Because offset wells are now being started, the company is exercising its discovery rights and will produce the well, under the local agreement, until the first of the offset wells is in for production. When opened the well produced for a short time and then died. The bailer was run and water developed. This was soon exhausted, evidently being an accumulation during the long time the well had been producing only a nominal amount.

It came back for big production and on July 12 made 1,510 barrels in 24 hours. The flow increased until the production for the 24-hour period ended the morning of July 14 was 2,936 barrels. The top of the Wilcox in this was 4457 feet and it is in two feet, one foot of which was drilled the past week.

The immediate drilling activity around this well apparently will consist of two more holes by the Gypsy; one by the Minnehoma Oil & Gas Co.; one by the Twin State Oil Co. and two by the Barnsdall Oil Co.

Over in the farthest west Wilcox pool for this part of the state, Twp. 7-5, Pottawatomie county, successive deepenings of the wells of Magnolia Petroleum Co. and T. B. Slick, in Sec. 19, have boosted the flow each time. On July 13 the Slick well, in the NE NW SE of 19-7-5 made 9,125 barrels and the west offset which discovered Wilcox production in this area, Magnolia's No. 1 Hembree, in the NW SE of 19-7-5, made 9,128 barrels.

Magnolia's direct north offset to its well was a Wilcox failure some days ago, topping the Wilcox at 4,285 feet, but has been plugged back to the Hunton lime where it is good for around 200 barrels daily.

During the week another well served to show that the Hembree pool may not be large. Gypsy Oil Co.'s No. 1 Powell, SE NW of 19-7-5, found the Wilcox at 4,405 feet and at two feet in the hole filled 1,100 feet with water. It is the northwest offset to the Magnolia discovery.

Magnolia's No. 1 Fyke, in the NW SW SE of 20-7-5, roughly a mile southeast of the big wells, is still producing more than 4,000 barrels daily. Whether it will develop that it is continuous production for this distance is uncertain. Several wells drilling in the intervening territory will partially show.

One and one-half miles west and north of the big wells of Magnolia and Slick, the firm of Westheimer & Daube, of Ardmore, drilled in one of those notable Simpson formation wells late in the week, for which the area is celebrated. Twp. 7-4 has to date yielded oil from the Hunton lime, from the Viola lime and from

*National Petroleum News, Jan. 25, 1928, page 21.

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the Simpson, but none from the Wilcox.

The Westheimer & Daube well, No. 2 Fried, NW corner SW NW of Sec. 24 found top of the Simpson at 4,244 feet and drilled to 4,268. It made 1,475 barrels in 8½ hours and its 24-hour gage for the period ended 7 a.m. July 14 was 3,997 barrels.

Another Simpson test in this township did not fare so well. Wilcox Oil & Gas Co.'s No. 1 Wyatt, SE corner NE NW of 10-7-4 drilled Simpson from 4220-60 and got a hole full of sulfur and salt water.

A Wilcox sand test in the township south of that one containing the big wells of Magnolia and Slick was completed by Slick. This was in the SE corner of 16-6-5. The Wilcox, drilled from 4,662-85 feet yielded sulfur water.

In the township next south of that containing most of the Little River pool and its new south extension, Gypsy Oil Co. drilled its No. 1 Davis, SE corner NE SE of 10-6-6 into sulfur water, Wilcox being topped at 3,979 feet and drilled to 4,012.

Over in the western part of Twp. 8-6, in the region of the Gypsy's discovery of several months ago in Sec. 7, some of the tests are reaching important depths. The area was kept shut down for considerable time until lease requirements called for drilling. In this area Marland Production Co.'s No. 1 Maines, NE corner SE SW of 7-8-6, topped the Wilcox at 4,413 feet and at two feet in it had 3,000 feet of oil in the hole. It swabbed 485 barrels in 18 hours. It is roughly three-fourths of a mile southwest of the Gypsy's discovery.

Another near completion in this pool is the Twin State Oil Co. No. 1 Hayes, NW corner NE NE of 8-8-6, about three-fourths of a mile northeast of the Gypsy well. At the end of the week it was setting 6-inch pipe at 4,075 feet and it had flowed 100 barrels from the Sylvan shale.

Several weeks ago the Superior Oil Corp. completed a big well in the north end of the Earlsboro field, No. 1 Walker, in the SE NE NE of 2-9-5. It is still making around 3,500 barrels. Its east and west offsets have reached the Wilcox. No. 1 Ingram, the east offset, in the SW NW NW of 1-9-5, topped the sand at 4,405 feet and was drilled in 15 feet where it was shot with 10 quarts. It was swabbing at the end of the week at 200-300 barrels daily, a large amount of water being produced.

The west offset to the big well, No. 2 Walker, in the SW corner NE NE of 2-9-5, got the top of the Wilcox at 4,430 feet and was drilled in eight feet. On Friday it swabbed a little more oil than it had either of the two preceding days, its production being 472 barrels of oil and 50 barrels of water. Like some other large edge wells of the Earlsboro field, this spot appears destined to yield only small wells around a big producer.

In Kansas there has been considerable interest in the test drilled by Harris & Haun southwest of the Rainbow Bend pool. This test, No. 1 Hendrix, NE SW SW SE of 14-34S-2E, Sumner county, found the Wilcox sand at 3,772 feet and was drilled in six feet. It swabbed 140 barrels in 24 hours, and is set down as another small well in an area that has had several failures.

The test of the Mid-Kansas Oil & Gas Co., No. 1 Larson, in the center NE SW of 31-18S-2W, McPherson county, failed to live up to its showing of three weeks ago. It is making about 20 barrels of fluid an hour, 18 per cent water. The water, however, is reported to have decreased from 37 to 18 per cent in three days.

Order Held Up on Two Rotary Gages

HOUSTON, July 12.—Carl A. Young, standardization director of the American Petroleum Institute, Dallas, advises that the rotary drilling equipment committee has held up the 2⅜-inch and 3½-inch gages that were included in the recent group order placed with Pratt & Whitney.

All new purchasers are to be advised that these two sizes are subject to change. Other gage sizes will go through as contemplated in the recent Pratt & Whitney order.

Work on the two sizes of gages held up was stopped because the California district committee felt that sizes of the joints should be changed to provide more strength in the box of the joint, which has a tendency to bell. It was agreed by the committee that this problem should be referred to other districts for analysis, study and experiment before final action.

LOS ANGELES, July 14.—E. F. Goggins, who recently has been covering the Gulf Coast, Louisiana and Arkansas fields for Dunn Mfg. Co., Oxnard, Calif., left Los Angeles late in June to cover the Gulf coast and north central Texas territories. A. V. "Ace" Bland of the same company was recently transferred from the Gulf coast fields, to cover Arkansas and Louisiana.

LOS ANGELES, July 14.—George C. Moon, vice-president, and E. O. Johnstone, district sales manager, of American Cable Co., were in Los Angeles recently as guests of W. B. Cornish, southern California factory representative for the company. Mr. Moon and Mr. Johnstone have headquarters at New York and San Francisco respectively.

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Higher Sand May Produce Oil In Long Beach Field

LOS ANGELES, July 14

TEN new producers were reported from California fields the past week, with a total initial production of about 10,000 barrels. As usual, Long Beach furnished most of the new wells and about 80 per cent of the flush production.

At Long Beach, four new wells averaged better than 2100 barrels each, and one of the new wells, near the southwest edge of the field, started out at the rate of 3500 barrels from only 316 feet of sand. This was Dabney-Johnson's No. 8, completed at 6004 feet, with last string of pipe cemented at 5688 feet.

The behavior of this test lends color to the belief held by some that there is a fault running about east and west through the lower end of the field. If this belief proves true, much new production at a higher level can be expected, and already new locations are being spotted in the general area. The production of the well is clean and the gas production is up to the average.

Due to the completion of only four wells at Long Beach, a decline will be noted in the weekly production figures, as the natural weekly decline is around 9500 barrels per day. A large number of Long Beach wells are drilling below 6000 feet and it is possible for 10 to 12 wells to be completed weekly for the next month. Drilling activity now extends over a territory almost twice the area absolutely proven three months ago, with the proven area extending constantly to the southwest.

Two small wells have recently been completed in the new Rincon field in Ventura county, one of which was completed in a new sand. Pan American's Hobson State 2 was drilled to 4106 feet and is making about 200 barrels of clean oil from 100 feet of oil sand. Other wells plan to make a further test of this new sand, but the new activity in the past three weeks is in the Muscle Rock area, nearly a mile north on the coast from Rincon proper. Five wells are now drilling in the new area.

At Huntington Beach, where drilling activity has been very slow for several weeks, Union and Standard have made one new location each. It is rumored that the Union hole is planned for a real deep test, but this report is without verification. Residents of Huntington Beach have reached the conclusion during the past week that a deep drilling campaign might be expected as lease men have again become active and in some instances tentative contracts are being asked on natural gas that might be produced from the sands below the present producing horizons.

The new MKT well at Ventura avenue is holding up around 2000 barrels. This well proves up the lower end of the Petroleum Securities' Orton tract and also proves another part of the Willett tract, held by the same company. Petroleum Securities early in the week made three locations and it is expected that Associated and Shell will also make at least one new location each, on their tracts lying very close to the MKT well.

The San Clemente well near Hawthorne in Los Angeles county was this week flowing at the rate of 250 barrels of clean 33-gravity oil into tanks and the oil is being hauled away in tank trucks by the Vernon Oil & Refining Co.

This is the wildcat that has proved another Los Angeles Basin field and which lies very close to Hawthorne and Lawndale townsites with hundreds of townlots held by individual owners.

There has been some leasing activity in the townlot area, but to date no large company has shown any real interest in the new field.

Other old fields of California during the week passed an uneventful week.

Prorating Method Not Settled In Little River Territory

TULSA, July 14

IT STILL isn't settled in the Little River territory. Just how the proration which begins on Sept. 10 will be handled is the subject for discussion at some future meeting of operators.

Umpire Ray M. Collins, the impresario of the shutdown opera, went to Oklahoma City on July 13 with a plan drawn up, providing, as set forth in these columns last week, for proration of Little River on a combination acreage and potential production basis.

At the corporation commission's hearing July 13, T. B. Slick set forth certain objections to the plan. He contended that prorating on percentage of production was unfair, and it is cumbersome and complicated and that it is subject to error in the gaging. He is for proration, Mr. Slick said, but he advocated a simpler plan.

Mr. Slick would take the total allowed production, which now is contemplated by operators to be 125,000 barrels per day, multiply it by the days in the month and call that the allowed production for the month. Every well would then be turned loose and all the wells in the field would be produced to capacity until the month's allowed production had been put in the tanks. If any days of the month were left over, the wells would be shut in to some nominal figure such as 50 or 100 barrels daily each, to comply with lease requirements and keep the wells alive, until the new month arrived and a new allowance of production set up.

The commission desired to take into full account the views of Mr. Slick or any other operator who dislikes the percentage plan, so it left the method of prorating to 125,000 barrels daily to be worked out by the operators, not putting into the order any method of doing the job. The order it issued did the following things:

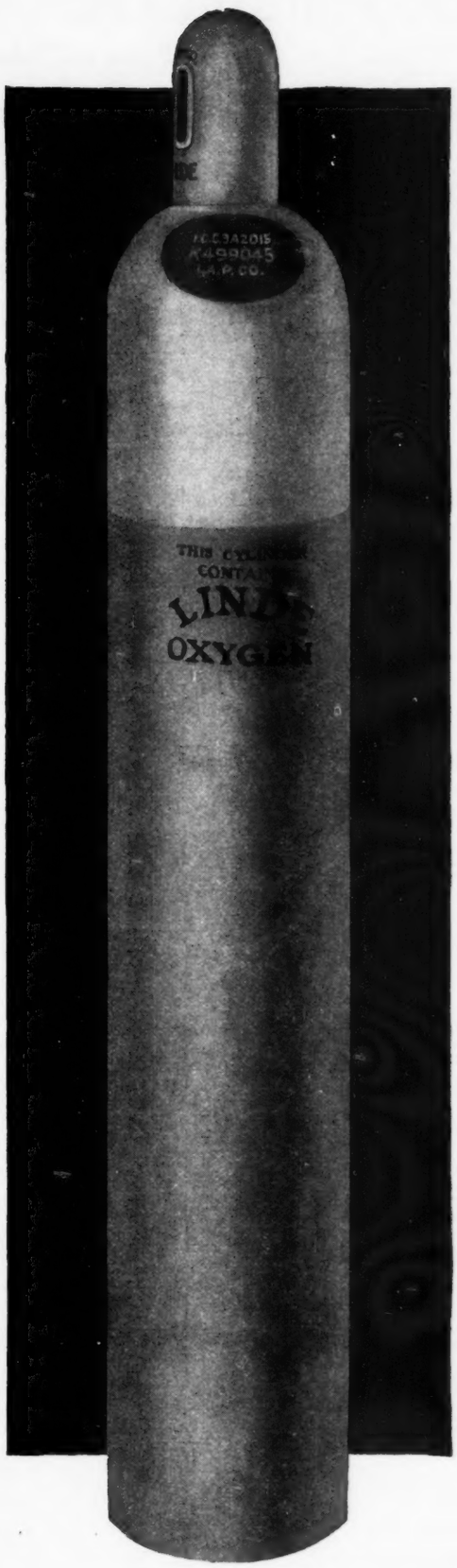
1—Removed restrictions on drilling embodied in a previous order, which limited the number to one well to each 20 acres.

2—Provided that wells now pinched to 100 barrels per day—there are 16 of them—in south Little River shall be held in that condition until Aug. 15.

3—Provided that on Aug. 15 wells may be opened to production to not to exceed 1600 barrels to each 40 acres or 800 barrels to each 20-acre lease, this restriction to stand to Sept. 10.

4—Provided that on Sept. 10 and lasting to Nov. 1, production of the entire Little River pool shall be held to 125,000 barrels daily.

With respect to the operators who have started more wells than the one to 20 acres provided in the previous order, settlement has been made in all but one case. A citation was issued by the commission in the case of the Reiter-Foster Oil Co. and hearing was set for July 20. The outlook at this time is for a compromise in this case without resort to commission authority.



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Seminole District Production by Companies and Leases, July 11 and July 3, 1928

BOWLEGS

Company	Farm	S.T.R.	July 11 Wells	July 11 Prod.	July 3 Wells	July 3 Prod.
Amerada	Rascoe	15– 8–6	8	1,260	8	1,435
Atlantic	Baker	1– 8–6	4	504	4	245
Atlantic	Fleet	23– 8–6	3	165	3	215
Atlantic	Grayson	21– 8–6	4	310	4	424
Atlantic	A. Jones	10– 8–6	3	45	2	75
Atlantic	C. Jones	9– 8–6	1	140	1	132
Total Atlantic			15	2,424	14	1,091
Barnsdall	McNac	28– 8–6	1	35	1	26
Barnsdall	Murrow	11– 8–6	4	693	4	737
Total Barnsdall			5	728	5	763
Carter	Bowlegs	15– 8–6	4	1,220	4	1,145
Carter	Burden	23– 8–6	2	215	2	225
Carter	Harjoche	15– 8–6	6	450	6	510
Carter	Hilly	23– 8–6	3	800	3	740
Carter	Jones	11– 8–6	4	770	4	780
Carter	McGeisey	21– 8–6	1	0	1	15
Carter	Walker	15– 8–6	4	340	4	480
Carter	Wise	23– 8–6	11	2,070	11	2,250
Total Carter			35	5,865	35	6,145
Dixie	Culley	11– 8–6	1	90	1	105
Empire	Lacey	15– 8–6	6	342	6	466
Empire	Wise	23– 8–6	2	325	2	335
Total Empire			8	667	8	801
Gypsy	Bowlegs	22– 8–6	1	0	1	240
Gypsy	Bradley	8– 8–6	1	2	1	5
Gypsy	Cumsey	8– 8–6	4	910	4	970
Gypsy	Dosar	7– 8–6	1	100	1	100
Gypsy	Grayson	13– 8–6	4	355	4	387
Gypsy	Harjoche	10– 8–6	2	1,355	3	1,745
Gypsy	Jones	11– 8–6	1	0	1	5
Gypsy	Mission	5– 8–6	1	50	1	50
Gypsy	Walker	15– 8–6	8	1,415	8	1,415
Gypsy	Wise	23– 8–6	2	217	2	225
Total Gypsy			25	4,404	25	5,142
I. T. I. O.	Barnett	23– 8–6	2	304	2	334
I. T. I. O.	Barnett-B	24– 8–6	1	167	1	177
I. T. I. O.	Billington	22– 8–6	5	527	5	538
I. T. I. O.	Bowlegs	22– 8–6	10	1,474	10	1,388
I. T. I. O.	Davis	22– 8–6	4	968	4	667
I. T. I. O.	Fay	13– 8–6	9	2,157	9	2,238
I. T. I. O.	Goforth	15– 8–6	12	1,318	12	1,442
I. T. I. O.	Livingston	15– 8–6	10	2,647	10	2,674
I. T. I. O.	Lizzie	13– 8–6	3	538	3	575
I. T. I. O.	Walker	15– 8–6	8	1,044	8	834
I. T. I. O.	Wilmott	15– 8–6	4	377	4	439
I. T. I. O.	Work	24– 8–6	1	119	1	113
I. T. I. O.	Youngblood	24– 8–6	2	135	2	124
Total I. T. I. O.			71	11,775	71	11,453
Magnolia	Davis	13– 8–6	3	489	3	485
Magnolia	Davis-M	13– 8–6	1	195	1	224
Magnolia	Hammond	10– 8–6	7	847	7	586
Magnolia	Rhodes	12– 8–6	5	2,771	5	2,972
Magnolia	Van Buskirk	9– 8–6	1	260	1	291
Total Magnolia			17	4,562	17	4,558
McCulloch	Bowlegs	22– 8–6	2	420	2	420
Mid-Continent	Baker	10– 8–6	4	919	4	1,017
Mid-Continent	Bowlegs	22– 8–6	1	2	1	5
Mid-Continent	Smith	12– 8–6	6	415	6	520
Total Mid-Continent			11	1,316	11	1,542
Minnehoma	Bowlegs	15– 8–6	4	280	4	254
Prairie	Gahagan	23– 8–6	4	290	4	300
Prairie	Harber	10– 8–6	8	2,150	8	2,385
Prairie	Jones	11– 8–6	4	500	4	420
Prairie	Templeton	12– 8–6	6	2,090	6	2,225
Prairie	Whitney	23– 8–6	4	775	4	475
Total Prairie			26	6,085	26	5,805
Pure	Reed	14– 8–6	14	3,833	14	3,836
Pure	Strother-D	14– 8–6	4	504	4	265
Pure	Strother-F	10– 8–6	7	2,241	5	1,764
Total Pure			25	6,578	23	5,865
Roxana	Taylor	16– 8–6	5	122	5	117
Shaffer	Lacy	14– 8–6	3	340	3	350
Sinclair	Bowlegs	22– 8–6	1	40	1	50
Sinclair	Cumsey	10– 8–6	4	2,181	4	2,267
Sinclair	Ellen	11– 8–6	7	715	7	790
Sinclair	Harjo	14– 8–6	3	660	3	1,040
Sinclair	Jones	10– 8–6	7	1,020	7	977
Sinclair	Taylor	10– 8–6	4	1,588	4	1,611
Sinclair	Taylor-W	10– 8–6	3	1,033	3	1,121
Sinclair	Walker	22– 8–6	4	767	4	822
Total Sinclair			33	8,466	33	9,078
Texas	Reed	14– 8–6	11	1,660	11	1,745
Tidal	Grayson	13– 8–6	4	325	4	360
Tidal	Harjoche	10– 8–6	6	1,650		
Tidal	Hayes	8– 8–6	1	160	6	1,475
Total Tidal			11	2,135	10	1,835
Twin State	Jones	11– 8–6	3	0	3	35
Total Bowlegs			319	57,195	315	58,339

EARLSBORO

Amerada	Anderson	15– 9–5	2	989	2	970
Amerada	Cowden	4– 9–5	7	1,699	7	1,670
Amerada	Rogers	3– 9–5	2	412	2	30
Total Amerada			11	3,090	11	2,670
Atlantic et al	Foreman	18– 9–5	1	155	1	155
Barnsdall	Brown	10– 9–5	4	2,965	4	2,655
Barnsdall	F. Bruner	2– 9–5	2	805	2	858
Barnsdall	N. Bruner	10– 9–5	3	1,258	3	976
Barnsdall	Cudjo	14– 9–5	1	25	1	25
Barnsdall	D. Davis	11– 9–5	3	220	3	291
Barnsdall	J. Davis	11– 9–5	4	1,308	4	1,261
Barnsdall	M. Davis	11– 9–5	3	84	3	87
Barnsdall	Gibson	9– 9–5	8	2,430	8	2,788
Barnsdall	Hern	15– 9–5	1	3	1	2
Barnsdall	Ingram	1– 9–5	8	2,115	8	2,203
Barnsdall	Pack	10– 9–5	4	179	4	187
Barnsdall	Peter	10– 9–5	4	232	4	189
Barnsdall	Sango	1– 9–5	5	5,575	5	5,607
Barnsdall	Sebolka	15– 9–5	1	410	1	409
Barnsdall	H. Sullivan	11– 9–5	1	7	1	4
Barnsdall	Sull-Harjo	10– 9–5	2	12	2	44
Barnsdall	Watsutke	12– 9–5	4	1,500	4	1,742
Total Barnsdall			58	19,128	58	19,148
Carter	Davis	13– 9–5	2	30	2	860
Carter	Sango	1– 9–5	4	20	4	620
Total Carter			6	50	6	1,480
Continental	Kays	2– 9–5	2	10	2	135
Continental	Spencer	12– 9–5	4	1,260	4	920
Total Continental			6	1,270	6	1,055
Crosbie	Bryant	9– 9–5	2	0	2	18
Empire	Barker	12– 9–5	1	280	1	365
Empire	Edmundson	3– 9–5	3	120	3	90
Total Empire			4	400	4	455
Gypsy	Bruner	10– 9–5	4	2,900	4	2,677
Gypsy	B. Carter	11– 9–5	8	3,305	8	4,242
Gypsy	Earl	16– 9–5	1	17	1	5
Gypsy	Hunick	5– 9–5	1	1,912	1	2,080
Gypsy	Noble	12– 9–5	4	2,240	4	2,145
Gypsy	Peter	10– 9–5	3	330	3	355
Gypsy	Sango	1– 9–5	5	2,202	5	2,750
Gypsy	State	16– 9–5	4	902	4	1,110
Total Gypsy			30	13,808	30	15,364
Independent	Bruner	10– 9–5	3	425	3	410
Independent	Sullivan	10– 9–5	2	57	2	96
Independent	Knapp	8– 9–5	3	2,101	3	2,129
Indep.-Margay	Gaines	11– 9–5	4	705	4	760
Total Independent			12	3,288	12	3,395
Magnolia	Bryant	9– 9–5	6	1,026	6	953
Magnolia	Cowden	4– 9–5	4	70	4	20
Magnolia	Edmundson	3– 9–5	3	20	3	25
Magnolia	Holmsley	11– 9–5	7	621	7	500
Magnolia	Hyde	13– 9–5	1	1,665	1	1,778
Magnolia	Ingram	10– 9–5	1	20	1	25
Magnolia	Lena	10– 9–5	3	70	3	70
Magnolia	Seay	12– 9–5	9	2,802	9	2,802
Magnolia	Simpson	10– 9–5	3	115	3	105
Magnolia	Sparks	11– 9–5	7	879	7	912
Magnolia	Sullivan	12– 9–5	3	103	3	100
Total Magnolia			47	7,391	47	7,290
Mid-Continent	McCumber	9– 9–5	7	80	7	90
Mid-Kansas	Anderson	14– 9–5	3	90	3	90
Phillips	Dunnaway	14– 9–5	1	30	1	30
Phillips	Gram	9– 9–5	3	0	2	15
Total Phillips			4	30	3	45
Prairie	Baker	24– 9–5	1	50	1	50
Prairie	Davis	13– 9–5	5	3,135	5	3,185
Prairie	C. Graham	3– 9–5	2	25	2	15
Prairie	O. Grahma	10– 9–5	4	1,250	4	1,290
Prairie	Stidham	11– 9–5	13	3,495	13	3,480
Total Prairie			25	7,955	25	8,020
Roxana	Bayliss	17– 9–5	1	15	1	14
Roxana	Hearn	13– 9–5	1	107	1	189
Roxana	Spencer	12– 9–5	2	1,164	2	937
Total Roxana			4	1,286	4	1,140
Shaffer	Clark	1– 9–5	4	560	4	865
Sinclair	Foreman	18– 9–5	1	16	1	15
Sinclair	Hollins	12– 9–5	1	40	1	50
Sinclair	Sango	2– 9–5	3	3,415	3	3,620
Total Sinclair			5	3,471	5	3,685
Skelly et al	Sherry	6– 9–5	1	3,336	1	3,693
Skelly	Spencer	12– 9–5	1	577	1	560
Total Skelly			2	4,113	2	4,253
Superior	Walker	2– 9–5	2	3,781	1	3,784
Superior	Ingram	1– 9–5	1	90	0	0
Texas	Anderson	2– 9–5	8	535	8	650
Texas	Brown	10– 9–5	8	1,385	8	1,485
Texas	Rogers	5– 9–5	4	2,705	4	3,085
Texas	Wilmott	10– 9–5	7	517	7	600
Total Texas			27	5,142	27	5,770
Tidal	Watkins	9– 9–5	7	3,000	7	3,260
Twin State	Barker	12– 9–5	2	88	2	68
Twin State	Hern	2– 9–5	4	880	4	1,105
Total Twin State			6	968	6	1,173
TOTAL EARLSBORO			275	79,156	272	83,255

LITTLE RIVER

Amerada	Nitey	2– 7–6	3	1,660	3	1,640
Amerada et al	Fore	35– 8–6	2	450	2	440
Total Amerada			5	2,110	5	2,080

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, July 11 and July 3, 1928

(Continued from Page 42)

Company	Farm	S.T.R.	July 11 Wells	July 11 Prod.	July 3 Wells	July 3 Prod.
Barnsdall	Hotulke	22- 7-6	1	34	1	33
Blackwell	Nitey	35- 8-6	6	1,880	6	2,357
Carter	Fish	36- 8-6	6	735	6	455
Carter	Jackson	11- 7-6	2	1,745	2	1,780
Carter	Larney	24- 7-6	1	100	1	100
Carter	Wilson	12- 7-6	1	100	1	100
Total Carter			10	2,680	10	2,435
Continental	Cosar	36- 8-6	4	1,805	4	1,790
Gypsy	Brown	33- 8-6	1	62	1	50
Gypsy	Conard	22- 7-6	1	100	1	100
Gypsy	Cosar-M	25- 8-6	1	90	1	157
Gypsy	Campbell	36- 8-6	2	197	2	212
Gypsy	Cosar-W	36- 8-6	1	440	1	495
Gypsy	Denmark	11- 7-6	1	100	1	100
Gypsy	Nungee	1- 7-6	1	30	1	30
Gypsy	Hulhoke	14- 7-6	1	100	1	100
Gypsy	Pottie	35- 8-6	4	1,189	4	1,338
Gypsy	Renton	11- 7-6	3	2,322	3	2,055
Total Gypsy			16	4,630	16	4,637
Independent	Harris	23- 7-6	2	200	2	200
Independent	Davis	2- 7-6	3	2,296	3	1,765
Total Indepenent			5	2,496	5	1,965
I. T. I. O.	Campbell	1- 7-6	1	319	1	314
I. T. I. O.	Dungan	35- 8-6	3	1,280	3	1,334
I. T. I. O.	MA House	1- 7-6	1	36	1	26
I. T. I. O.	WE House	1- 7-6	1	65	1	81
I. T. I. O.	WE House-B	2- 7-6	4	1,576	4	1,593
I. T. I. O.	Hull	26- 8-6	2	2,018	2	2,167
I. T. I. O.	Jackson	1- 7-6	3	1,157	3	1,226
I. T. I. O.	McCulla	1- 7-6	3	738	3	624
I. T. I. O.	Nitey	2- 7-6	6	661	6	684
I. T. I. O.	Phoebe-A	36- 8-6	3	560	3	613
I. T. I. O.	Phoebe-B	36- 8-6	4	161	4	184
I. T. I. O.	Reed	1- 7-6	1	31	1	51
I. T. I. O.	Soketheche	1- 7-6	3	710	3	786
Total I. T. I. O.			35	9,312	35	9,643
Magnolia	Cruse	2- 7-6	4	1,238	4	1,366
Magnolia	Harjo	14- 7-6	1	0	1	2,455
Magnolia	Dixon	31- 8-7	1	7	1	5
Magnolia	Reed	22- 7-6	1	100	1	100
Magnolia	Pottie	35- 8-6	3	775	3	2,455
Total Magnolia			10	2,120	10	4,682
Mid-Continent	Bruner	11- 7-6	1	100	1	100
Mid-Cont.	Smith	5- 7-7	1	65	1	70
Mid-Cont.	Wadsworth	36- 8-6	7	690	7	735
Total Mid-Continent			9	855	9	905
W. B. Pine	Hoyecha	26- 8-6	2	1,007	2	1,330
Pine et al	Pottie	36- 8-6	2	610	2	460
Total Pine			4	1,617	4	1,790
Pure	Harjo	11- 7-6	1	2,425	1	2,625
Prairie	Chilcoat	25- 8-6	3	950	3	1,465
Prairie	Dungan	35- 8-6	1	0	1	55
Prairie	House	2- 7-6	4	965	4	970
Total Prairie			8	1,915	8	2,490
Reiter-Foster	Bunyard	14- 7-6	1	100	1	100
Shaffer	Narcome	36- 8-6	1	50	1	60
Sinclair	Cosar	36- 8-6	3	2,665	3	2,830
Sinclair	Teewee	14- 7-6	1	100	1	100
Total Sinclair			4	2,765	4	2,930
Snowden-McS	Tiger	13- 7-6	1	0	1	0
Superior	Soketheche	1- 7-6	1	0	1	10
Texas	Coker	1- 7-6	3	1,555	3	1,640
Texas	Hotulke	23- 7-6	1	100	1	115
Total Texas			4	1,655	4	1,755
Tidal	House	1- 7-6	3	625	3	655
Tidal	Johnson	1- 7-6	1	35	1	40
Total Tidal			4	660	4	695
TOTAL LITTLE RIVER			134	39,670	134	43,613

SUMMARY

	July 11 Wells	July 11 Prod.	July 3 Wells	July 3 Prod.
TOTAL BOWLEGS	**319**	**57,195**	**315**	**58,339**
TOTAL EARLSBORO	**275**	**79,156**	**272**	**83,255**
TOTAL SEMINOLE	**300**	**51,311**	**300**	**51,927**
TOTAL SEARIGHT	**67**	**11,995**	**67**	**11,910**
TOTAL LITTLE RIVER	**134**	**39,670**	**134**	**43,613**
TOTAL	**1,095**	**239,327**	**1,088**	**249,044**
Avg. per well		**216**		**228**

Completions in Oklahoma and Kansas, Week Ended July 14, 1928

OKLAHOMA

Company	Well No.	Location	Depth	Init. Prod.
Caddo County				
Caddo	4	SEc NE SE 5-5-9 W	1940-2390	35
English Drlg	4	NEc NW SE 5-5-9 W	T.D. 2468	Dry
Canadian County				
Ramsey Bros	1	CSL NE 9-11-7 W	T.D. 6010	Dry
Carter County				
Cox-Hammon	3	NE SE NW 23-1-3 W	2284-2527	3207
Magnolia	2	SWc NW 33-1-3 W	3274-3567	200
Creek County				
Shaffer	2	NEc SW 26-18-7 E	2912-2942	11M
Dixie	3	NWc SE SE 7-19-9 E	2875-2887	75
Regal	19	SEc SW SW 13-18-11 E	1518-1553	12
Murta et al	2	NWc SW SW 35-16-10 E	3040-3078	125
Wood-Wood	1	SWc SE SW 34-19-8 E	T.D. 3334	Dry
Chief Drlg	2	NWc SE 16-17-10 E	T.D. 3056	Dry
Devonian et al	1	SEc NW 3-16-11 E	T.D. 2654	Dry
Shock	1	NEc NW NE 26-14-10 E	T.D. 3343	Dry
Prairie	1	NEc SE 14-18-9 E	T.D. 3175	Dry
Grady County				
Magnolia	6	NWc SW SE 26-5-8 W	T.D. 2400	30M
Texas	4	NEc NW SW 13-4-8 W	T.D. 2284	20M
Jefferson County				
Bridwell	3	NEc SW SW 24-6-6 W	1727-1729	150
Leash-McCall	4	NWc NE SE SW 17-7-5 W	784-806	40
Leash-McCall	2	SEc SW 17-7-5 W	770-784	40
Leash-McCall	3	SWc SE SE SW 17-7-5 W	770-787	50
Leash-McCall	4	NWc SE SE SW 17-7-5 W	774-792	25
McGinley-Sigler	1	NEc NW NW 20-7-5 W	760-776	25
McGinley-Sigler	2	NEc NW NE NW 20-7-5 W	764-780	25
Williams	1	NEc SE SE NW 20-15-17 E	T.D. 1707	Dry
Nixon	1	NEc SW SE 29-15-19 E	T.D. 750	Dry
Okfuskee County				
Umburm	3	NWc NE SE 11-10-11 E	2009-2028	450
Mid-Continent	1	NEc SW NW 29-10-9 E	T.D. 4245	Dry
Okmulgee County				
Dodge et al	1	NWc SE NE 29-15-12 E	T.D. 371	Dry
Pope	1	NWc NE SE SE 14-14-12 E	T.D. 2588	Dry
Sheldon	1	SWc NW 20-13-12 E	T.D. 3175	Dry
Betty Ann	1	NWc SE 30-12-12 E	T.D. 2682	Dry
Rapp et al	1	SEc NE 35-15-12 E	2838-2840	2½M
Detrick et al	1	NEc SW 17-13-11 E	2485-2497	36M
Osage County				
I. T. I. O.	7	SWc NE 26-25-9 E	2095-2192	2
I. T. I. O.	269	SEc NW 8-25-11 E	2165-2167	OWD 3M
I. T. I. O.	395	NWc NE NE SW 4-23-9 E	574-579	2M
Moore-Ohio Osage	2	CNL S½ N½ SW 9-21-9 E	390-402	10
Moore-Ohio Osage	3	CSL N½ SW 9-21-9 E	393-403	12
Pawnee County				
Baker et al	1	SEc SW NE 10-20-6 E	3124-3125	10
Gries et al	1	SEc NE 27-20-8 E	T.D. 3207	Dry
Ponto'oc County				
American	1	NWc NE NE 13-4-6 E	T.D. 3570	Dry
Superior	1	SWc SE 29-5-5 E	T.D. 2697	2
Superior	1	NEc NW 32-5-5 E	2495-2522	615
Shaffer	8	NWc SW SW 9-5-8 E	2458-2527	65
Ramsey	3	SWc NW SW 17-5-8 E	2575-2592	OWD 350
Louisiana	2	SWc NW NE 18-5-8 E	2685-2738	160
Pottawatomie County				
Twin State	6	NEc NW SE 19-7-4 E	3737-3872	130
Sinclair	1	NWc SW 24-7-4 E	4133-4162	1812
Seminole County				
Prairie	3	NWc SW SW 25-8-6 E	4447-4454	400
Prairie	2	SEc SW SW 25-8-6 E	4664-4671	430
Roxana	2	SWc NE NW 13-9-5 E	4351-4361	190
Pine	2	SEc 26-7-6 E	4115-4125	887
Gypsy	1	SWc NW SW 25-8-6 E	4160-4171	155
Magnolia	1	NEc 14-7-6 E	4241-4250	2455
Sunray-Larkin	1	NEc NW NW 4-9-6 E	T.D. 4476	Dry
Magnolia	1	NWc SE 13-8-6 E	T.D. 4226	Dry
Stephens County				
Muse et al	1	SWc SE SE 1-2-8 W	T.D. 1700	Dry
Owen-Wood	11	NEc SE NW 12-2-8 W	T.D. 1572	Dry
Smith	1	NWc NE SE 25-1-4 W	T.D. 3549	Dry
Malernee et al	1	NWc NE SE 31-1-8 W	1818-1828	8M
Ft. Ring et al	4	NEc SE SE 28-1-8 W	2194-2201	60
Hupp-Duff	4	SEc NW SW 34-1-8 W	1660-1665	10
Pace et al	6	NEc SW SE NE 12-2-8 W	1547-1567	200
Pace et al	7	NEc SE NE 12-2-8 W	1564-1570	50
Pace et al	1	SEc NE NW 18-2-7 W	1493-1505	160
Westheimer	1	NEc 13-1-4 W	2766-3000	50
Tulsa County				
Ellen	6	NEc NW NE NE 25-18-14 E	1271-1305	25
Wagoner County				
Deems	11	SEc NW SW 31-18-15 E	T.D. 1300	Dry
Lowerre	1	NWc SW SW 14-16-15 E	T.D. 1293	Dry

KANSAS

Company	Well No.	Location	Depth	Init. Prod.
Barber County				
Shaffer	1	CSE SE 2-33-13 W	T.D. 3980	Dry
Butler County				
Mohawk	3	NWc NE SE 6-27-6 E	2710-2731	60
Coffee County				
Sheedy et al	4	CNW SW 11-23-13 E	1772-1792	20
Cowley County				
Roth-Faurot	1	SEc 32-33-4 E	T.D. 267	Dry
Shawver et al	1	NWc 10-34-3 E	T.D. 3802	Dry
Maverick	2	SEc NW NW 22-34-3 E	T.D. 625	Dry
Elk County				
Roth-Faurot	12	NWc NE NW SW 13-29-8 E	T.D. 3014	Dry
Elk Pet.	2	CSE 33-29-9 E	T.D. 2296	OWD Dry
Jaqueline	1	NWc SE 3-30-12 E	T.D. 775	Dry
Hazlett et al	1	NWc NE NW 16-31-10 E	T.D. 2360	Dry
Denton et al	1	CNL NE NE 16-31-10 E	1994-2024	35
Blandell	2	SEc 20-31-10 E	2136-2140	10
Greenwood County				
Empire	20	SEc NW NW 23-22-11 E	1870-1897	40
Amerada	1	SWc NW SW 29-22-13 E	1700-1715	300
Simmons et al	4	SEc NE SE 30-22-13 E	1704-1720	30
Rhodes et al	1	SEc SW NE 33-22-10 E	T.D. 2433	Dry
Sheedy et al	1	NWc SW NE 18-24-13 E	T.D. 1638	Dry
Obins	1	NWc SW 6-27-12 E	T.D. 1880	Dry
Marion County				
Garden et al	1	SEc NE 3-17-4 E	T.D. 2603	Dry
Osborne County				
Liggett et al	2	SWc SE NW 34-10-15 W	T.D. 3365	Dry
Russell County				
Keys	14	SEc SW NE 32-13-15 W	T.D. 3106	250
Day	1	SWc SE NE 32-13-15 W	3331-3335	500
Day	2	SEc NE 32-13-15 W	3328-3331	600
Sumner County				
Roxana	5	SEc NW NW 36-31-2 E	1924-1952	20
Roxana	2	SEc NE NW 14-32-2 E	2036-2090	10
Roxana	11	NW NE NE 14-32-2 E	2042-2095	40
Wasson et al	10	SWc NW SE SW 14-32-2 E	1625-1644	400
Ramsey et al	1	NWc SE 22-32-2 E	T.D. 2343	Dry
Imo	1	NWc NE SW 21-33-2 E	T.D. 2710	Dry
Woodson County				
Fields-Cross	1	SEc NW SE 24-25-13 E	T.D. 1571	Dry
Curtiss et al	4	NWc NE SW 22-25-14 E	T.D. 1658	Dry

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended July 7, 1928

NORTH AND EAST CENTRAL

Brown County

Company	Well No. Farm	Location Survey	Depth	Init. Prod.
Anna Belle	1-Butler	Benson	1243-1260	75
Knox Prod.	3-Hickman	Benson	1282-1305	200
Midland	6-Butler	Benson	1249-1264	150
Knox Prod.	11-Hickman	Benson	1241-1256	100
Anna Belle	6-Hickman	McGlin	1258-2178	80
Midland	1-Hickman	McGlin	1259-1276	150
Phillips	1-Alameda	Beck	1167-1183	2M
Cranfill-Reynolds	8-Eubanks	Mitchell	1262-1277	100
Carter et al	3-Lewis	Kinney	1075-1087	40
Rawlins et al	1-Joplin	Bragg	1665-1744	18
Roxana	16-Smith	SA&MG	T.D. 1432	Dry
Crowder et al	2-Lewis	Kinney	T.D. 1125	Dry
Kerr et al	1-Boyson	Mullins	T.D. 1760	Dry
Heathley et al	1-Williams	Malone	T.D. 400	Dry

Callahan County

Ungren-Fraser	2-Snider	BBB&C	T.D. 1092	Dry
Ames	1-Betty Bros.	Powell	T.D. 1120	Dry
Valley	7-Ramsey	D&DA	T.D. 451	Dry
Valley	8-Ramsey	D&DA	T.D. 520	Dry
Richards	1-Hill	D&DA	T.D. 558	Dry
Gilson-Johnson	5-Wylie	Univ.	T.D. 806	Dry
Vork	2-Kile	TE&L	T.D. 430	3
Valley	2-Ramsey	D&DA	T.D. 450	8

Coleman County

Ross et al	1-Weis et al	Loopy	2105-2115	11.4M
Humphrey Bros.	1-Henderson	Crocheson	T.D. 2004	Dry

Comanche County

Hoffer	1-Haile	Crump	2890-2990	1½M
Fain	1-Smith	Ragmond	2760-2792	20

Eastland County

Mays et al	1-Von Green	H&TC	T.D. 1710	Dry
Cleavenger	1-Penn	SP	T.D. 295	Dry
Anderson	1-Collins	D&DA	T.D. 2885	Dry
Chestnut-Smith	1-Broshears	Van Norman	1452-1477	20
Parsons et al	5-Blackwell	McLennon Co. Sch. Land	2979-2986	100
Chestnut-Smith	2-Kurklin	H&TC	3420-3452	3&1M

Jack County

Connell-Wixon	6-Ellis et al	Williams	T.D. 511	10

McCulloch County

Tulsa Drlg	1-Kirkpatrick	Henderson	T.D. 1550	Dry
Hallsell	1-Walker	H&TC	T.D. 1890	Dry

WEST TEXAS

Crane County

Texas-Pacific	1-Crane et al.	Univ.	2986-3012	80
Humble	1-Univ.	Univ.	2858-2959	236
Texas	2-Univ.	Univ.	2840-2977	480

Crockett County

Young et al	1-Todd	GC&SF	T.D. 1683	Dry
Pecos	1-Univ.	Univ.	T.D. 1640	Dry

Garza County

Marland	1-Pippin	Young	T.D. 3515	Dry

Glasscock County

Gulf Prod	1-Clay	W&NW	T.D. 1900	45
Weekly	1-Roberts	W&NW	T.D. 3504	25

Howard County

Magnolia	1-Hyman	W&NW	T.D. 3640	Dry

Terrell County

Deep Rock	1-Noelke	HC	T.D. 3502	Dry
Humble	1-State Lands	State Lands	T.D. 4470	Dry

Ward County

Selby	1-Rogers	GMMB&A	T.D. 3632	Dry

Winkler County

Humble	2-Hendricks	PSL	T.D. 2880	985
Humble	3-Hendricks	PSL	T.D. 2951	536
Humble	6-Hendricks	PSL	T.D. 2990	200
Landreth Prod.	2-Hendricks	PSL	T.D. 2821	7920
Landreth Prod.	1-Hendricks	PSL	T.D. 2848	7320
Murchinson et al	1-Hendricks	PSL	T.D. 2879	1210& 35M
Skelly	2-Hendricks	PSL	T.D. 2700	17760 & 50M
Southern Crude	T88M2-Hendricks	PSL	T.D. 2722	9600
Southern Crude	T88M3-Hendricks	PSL	T.D. 2765	200
Atlantic	2-Hendricks	PSL	T.D. 2750	8400
Landreth Prod.	3-Grisham et al	PSL	T.D. 2976	200
Pure	2-Hendricks	PSL	T.D. 2680	18,600
Republic Prod.	2-	PSL	T.D. 2496	1809
Republic Prod.	1-Hendricks	PSL	T.D. 2860	206
Roxana	3-Hendricks	PSL	T.D. 2796	14,640
Atlantic	8-Hendricks	PSL	T.D. 2920	8400
Pure	13-Hendricks	PSL	T.D. 2941	2880
Southern Crude	T-8813-Hendricks	PSL	T.D. 2915	1000
Southern Crude	T673A3-Hendricks	PSL	T.D. 3059	240

PANHANDLE

Carson County

Gamble	1-Deeds	TT	T.D. 850	Dry

Dallam County

Marland	1-Capitol Lds.	CS&S	T.D. 3500	Dry

Gray County

Royalty	1-Finley	Chaney	T.D. 2951	58

Moore County

Amerillo	1-Seay	G&M	T.D. 2671	14M

Ochiltree County

Standard Dev.	1-Bowen	H&TC	T.D. 861	Dry

NORTH TEXAS

Archer County

Arco	1-Perkins et al	Denton Co. Sch. Lds.	995-1010	15
Stumpf-Hines	1-Perkins et al.	Denton Co. Sch. Lds.	1000-1010	112
Stumpf-Hines	2-Perkins et al.	DCSL	633-634	20
Texas	1-Griffith	DCSL	998-1008	168
Grebin et al	1-Alexander	Meade Sub.	1413-1419	26
Arco	1-Perkins et al.	Denton Co. Sch. Lds.	T.D. 1024	Dry
Hines et al	1-Netherton	ATNCL	T.D. 1602	Dry
Long et al	1-Fish	Harris Sub.	T.D. 1210	Dry
Texas Unity	2-Tuberville	Jefferson Co. Sch. Lds.	T.D. 1205	Dry
Marland et al	1-Ward	TE&L	T.D. 1038	Dry
Lamberth	1-Andrews	TE&L	T.D. 1007	Dry

Clay County

Ross et al	1-Fey	PCSL	1707-1725	.45M

Montague County

Hedrick Camp Drlg.	1-Lemon	Little	T.D. 914	Dry

Wichita County

Bridwell	2-Waggoner	George	T.D. 1917	Dry
Hammon-Garrett	1-Mitchell	Lewis	T.D. 417	Dry
Texas	2-Mangold	Castleman	T.D. 2027	Dry
Texas	354-Waggoner	Meade	T.D. 1978	25
Hines et al	1-Waggoner	GC&SF	T.D. 1398	40
Texas et al	4-Waggoner	George	T.D. 2066	15 (11 HRs)

Wilbarger County

Bohner	1-Harrold	H&TC	235-240	5
Phillips	12-Waggoner	H&TC	1850-1881	114
Manhattan	1-Waggoner	H&TC	2391-2401	125
Cosden	22-Waggoner	H&TC	2294-2305	185
Fain-McGaha	4-Waggoner	H&TC	T.D. 2410	840
Fain-McGaha	6-Waggoner	H&TC	2335-2350	115
Barkley-Meadows	1-Waggoner	H&TC	1842-1847	66
Consolidated	2-Waggoner	H&TC	1841-1857	270
Consolidated	3-Waggoner	H&TC	1846-1860	250
Texas	1-Waggoner	H&TC	1871-1876	65
Waggoner Farm	1-Waggoner	H&TC	1800-1865	66
Texas	6-Waggoner	D&A	T.D. 2702	Dry

Young County

Morrison	3-Keene	Compere	T.D. 744	Dry
Gyset	1-Babaussett	Wood	T.D. 800	Dry
Strachan	1-Konwenberg	TE&L	T.D. 700	Dry
Givynn et al	2-Kunkel	BBB&C	1140-1153	36
Bullington Lee et al	6-Boone	BBB&C	476-486	15

Drilling Operations in Oklahoma and Kansas, Week Ended July 14, 1928

	July 14 Loc.	Rigs	Drg.	S.D.	Week Ended Total	July 7 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	3	1	14	..	18	2	2	13	..	17
Other Osage	7	10	20	2	39	7	14	15	2	38
Bristow-Cushing	6	4	26	7	43	3	3	29	7	42
North Oklahoma	5	7	54	26	92	5	9	48	27	89
South Oklahoma	9	15	80	31	135	12	10	83	29	134
Muskogee	..	14	54	21	89	..	8	54	17	79
Okmulgee-Bristow	10	27	72	24	133	11	29	73	24	135
Seminole Dist.	32	62	264	20	378	30	63	249	20	362
Total Oklahoma	72	140	584	131	927	70	138	563	126	897
KANSAS	..	71	146	80	297	..	80	134	82	296
GRAND TOTAL	72	211	730	211	1,224	70	218	697	208	1,193

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended July 14, 1928

OKLAHOMA

Caddo County

Company	Well No. Farm	Location
Caddo	1-McKenna	NWc SW SW 4-5-9 W
Kahl et al	2-Betty	NEc SE NE 14-4-8 W

Canadian County

Ramsey Bros	1-Newman	SEc SW NE 9-11-7 W

Carter County

Cox-Hamon	4-Vorhees	SEc NW 23-1-4 W
Magnolia	4-Lewis	SWc NW NE 23-1-4 W
Magnolia	2-Pollick	SEc SW SE 14-1-3 W
Magnolia	2-Gill	SWc NE 23-1-3 W

Creek County

Independent	2-Beaver	SEc NW SW 15-14-8 E
Twin State	2-Coachman	SEc SW NE 20-17-7 E
Tidal	2-Robinson	NEc NW SE 20-17-7 E
Pine et al	1-Hill	NWc NE SE 20-17-7 E
Houston	1-Bullet	SWc SE NE 20-17-7 E
Redister	5-Murrell	C NE NW 17-19-9
Roxana	7-Sewell	SWc NE NE 18-19-9
Dixie Drlg	2-Pahcahney	C SE NW 28-18-11
Ellwood et al	5-Harry	CNL NW NE 9-17-11
Tibbens	1-Winter	SWc SE NE 30-15-9
Barnsdall	1-Smith	NEc NW 1-15-10

Hughes County

I. T. I. O	2-Bingham	SWc NE SW 8-5-8 E OWD
I. T. I. O	3-Bingham	NEc SE SW 8-5-8 E

Jefferson County

Bridwell et al	1-Trout	NWc SW NE 10-7-6 W
McGinley et al	2-Clark	SEc SW SE 17-7-5 W
McGinley et al	3-Clark	SEc SW SE 17-7-5 W
McGinley et al	4-Pfile	NWc NE 20-7-5 W

Kay County

Wilson-Barnsdall	1-Piper	NEc SE 19-29-1 E OWD
Burnham et al	3-Alberty	SWc SE SE 32-29-1 E
Nye-Farrell	1-Snyder	NWc SW NW 33-29-1 E

Mayes County

Bradley-Reynolds	1-Severs	NWc NE NE NE 2-21-18 E

Muskogee County

Jolly	7-Vanderslice	NEc SE 30-15-15 E OWD
Metzer et al	2-Clumpton	CNL SW SE SE 6-14-19 E
Bradley	8-Cumpton	C NW NW NW 8-14-19 E

Okfuskee County

Umburn	1-Johnson	SEc SW SE 2-10-11
Jarvis et al	1-Hen	SW SE 16-10-11 OWD
Barnsdall	1-Gilbert	NWc SE SW 15-10-9 OWD

Okmulgee County

Pine	2-Skidmore	SEc NE NW 10-15-14 E
B & B Drlg	1-Ross	NWc SW NW 21-14-13
Lambert	1-Jefferson	SWc NE NW 21-14-15 E
Troutt Drlg	8-Doyle	C NW NW 28-13-14 E
Pine	3-Hendry	C NE NE 30-12-13 E

Osage County

Marland Prod	1-	NEc SW 18-26-6
Stanley et al	1-	NWc 15-25-8
Lake et al	1-	SEc NW 32-24-8
Osage Gas Prod	389-	NEc NW 32-24-12
Rex Pyramid	41-	SWc NE 34-22-10
Okla. Nat	787-	CNL NE SE 10-21-10

Pawnee County

Thompson-Black	1-Richards	CNL NE NW 23-20-9

Pontotoc County

Ogg Pet	1-Butler	SEc SW SW 29-5-5 E
La Salle	1-Mole	SEc 30-5-5 E

Pottawatomie County

Gypsy et al	5-McGee	NWc SE NE 23-7-4 E
Independent et al	3-Freid	SWc NE NE 23-7-4 E
Shaffer	1-Cherry	NEc SE SE 23-7-4 E
Blackwell	1-Lewis	SWc NE 24-7-4 E
Magnolia	2-Wilburn	NWc SE 24-7-4 E
Sinclair	3-Blandin	NEc SW 24-7-4 E
Sinclair	4-Blandin	NWc SW SW 24-7-4 E
Independent	6-Youts	SEc 19-7-5 E
Sinclair	3-Kitchee	SEc SW SW 19-7-5 E
Sinclair	4-Kitchee	SEc NW SW 19-7-5 E
Sinclair	5-Kitchee	NEc SW SW 19-7-5 E
Slick	3-Youts	NWc SE SW 19-7-5 E
Slick	4-Youts	SWc SE SW 19-7-5 E

Roger Mills

Hivick	1-	C 4-11-26 W

Seminole County

Magnolia	1-Sissie	SWc NW 33-8-7 E
Marland-Shaffer	1-Harrison	SEc SW 4-7-7 E
Slick	1-Chilcoate	NWc NE 9-7-7 E
I. T. I. O	1-Fleet	NEc SE SW 18-5-8 E
Texas	1-Lucy	NWc SW SE 18-5-8 E
McCulloch et al	1-Rentie	NEc NW NW 7-9-6 E
Gypsy	1-Bourassa	SEc NE 7-8-5 E
Amerada	1-Taylor	NEc NW SE 8-8-6 E
Carter	2-Harjo	SWc NW SW 13-7-6
Reiter-Foster	3-Bunyard	SWc NW SW 14-7-6 E
Skelly	2-Carl	NWc SE NE 14-7-6 E
Sinclair	3-Williams	NEc SW SE 15-7-6 E
Wigdon-Long	1-Jefferson	NWc NE 31-7-6 E

Stephens County

Magnolia	7-Green	NWc 13-1-4 W
Magnolia	1-Stewart	SEc SW SE 34-2-5 W
Magnolia	3-Burke	NEc NW NE 34-1-8 W
Nuse	2-Branch	SWc SE 1-2-8 W
Pace et al	2-Bristowe	SWc SE NE NW 18-2-7 W

Wagoner County

Minshall et al	1-Nave	NWc SE 6-19-15
Bradley et al	2-Replogle	CS½ N½ 31-19-16
Crighton	3-Childers	SWc NW 22-18-17 E
Casey	7-Tucker	CEL SE SW 30-18-18 E
Reiter-Foster	4-Childers	C NW SW 21-17-16 E

Woods County

Miller et al	1-Copenhaver	NWc 18-24-13 W

KANSAS

Butler County

Company	Well No. Farm	Location
Empire	1-Brandenberger	SEc NW NE 22-27-5 E
Davis et al	7-Lewis	NEc SW SW 3-27-6 E
Mohawk	3-Palmer	SEc NE 6-27-6 E
Mohawk	4-Doughty	NEc SE 6-27-6 E
Rosenthal et al	1-Marshall	NWc NE NW 10-27-6 E
Dixie	1-Stearns	SEc SW SE 28-27-6 E
Davidson et al	1-Pemisch	SWc NE NW 5-28-7 E
Ligget et al	1-Morti	SWc NW SE 7-28-7

Coffee County

Ark. Fuel	2-Burk	NWc SW NW 23-22-13 E

Cowley County

Elliott	1-Elliott	NWc 21-35-5 E
Krow-White	1-McErwin	CNL N½ SE 4-33-5 E
Hartman-Skaer	1-Shane	SWc NW 13-33-3 E
Lario	1-Kent	NEc NW SW 34-32-3 E
Shawver	1-Schmidt	NEc SW 22-31-3 E

Edwards County

Amerada-Wilcox	1-Tonsil	C NW SW 32-25-19 W

Ellis County

Davis et al	1-Dickerson	SWc 15-12-16 W
Mid-West Explo	1-Austin	NEc 36-12-16 W
Brown et al	1-Gerstner	SEc SW NE 13-13-18 W
Labette	1-Urban	NEc NW NW 19-15-16 W
Finney-Wenner	1-Freeman	NEc SW 24-15-20 W

Greenwood County

Braden-McClure	3-Young	SEc NE SE NE 22-22-13 E
Parrish et al	1-Morgan	NWc 15-24-12 E
Carney	1-Lovitt	NWc SW NW 18-25-12 E
Devine et al	1-Brown	C NE SW 22-26-11 E
Globe	2-Konald	NWc SW 15-26-13 E

Harvey County

Austin et al	1-Neiman	SWc 21-24-2 E

Marion County

Phillips	1-Keiser	NEc 34-17-4 E

McPherson County

Newman et al	1-Deepenbrock	NWc NE 2-17-1 W
Tatloyd	1-Rosenberg	C SE NW 31-18-2 W
Tatloyd	2-Chindberg	CEL SW NW 32-18-2 W

Osborne County

Johnson et al	1-Cooley	C NW NE 15-8-15 W

Ottawa County

Anderson et al	1-Ottawa Co. Bk.	NEc NW 28-10-2 W

Stevens County

Trees	1-	SWc NE SW 3-35-38 W

Sumner County

Cameron et al	1-Shepherd	SEc NW 1-32-2 E

TEXAS
NORTH AND NORTH CENTRAL

Archer County

Arco	2-Perkins et al	League-3, Blk-14	DCSL
Sun	2-Ford	Abstract-35	Fitzgerald
Texas	3-Griffith	League-3, Blk-12	DCSL
Barnsdall	1-Wilson	Abstract-179	Howard
Barnsdall	6-Wilson	Abstract-179	Howard
Donohue et al	1-Turbeville	Blk-148	Carson
Weiser	1-Anderson	Sec-38, Blk-4	Clark et al
Panhandle	2-Colgan	Abstract-276	Martin
Consolidated	1-Lisle	Blk-3	Meade

Brown County

Candle-Flint	1-Copeland	Sec-47	HT&B
Bradstreet	13-Stout	Blk-155	Smith
Anna Belle	7-Hickman	Blk-783	Benson
Anna Belle	8-Hickman	Blk-783	Benson
Anna Belle	3-Armstrong	Blk-151	Curlong
Baker-Hodges et al	1-Miers	Blk-3	SA&MG
Charter	2-Byler	Blk-43	T&NO
Clark Buffalo	6-Perry	Blk-624	Kenney
Clark Buffalo	7-Perry	Blk-624	Kenney
Hammond et al	3-Curry	Blk-624	Kenney
Hammond et al	4-Curry	Blk-624	Kenney
Hammond et al	5-Curry	Blk-624	Kenney
Hammond et al	6-Curry	Blk-624	Kenney
Midland	8-Butler	Blk-783	Benson
Midland	9-Butler	Blk-783	Benson
Midland	2-Hickman	Blk-801	McGloin
Midland	3-Hickman	Blk-801	McGloin
Sawyer-Shad	1-Stone	Blk-144	Williams
Sawyer-Shad	1-Stone	Blk-142	Milliker
Cranfill-Reynolds	1-Graham Est.	Sec-7, Blk-137	Brown
Humble	5-Byler	Blk-43	T&NO
Humble	1-Hickman	....	Kinsey
Humble	14-Kilgore	Sec-3, Blk-789	Delgando
Kone Prod	5-Hickman	Blk-783	Benson
Kone Prod	6-Hickman	Blk-783	Benson

Callahan County

Burnham	1-Alexander	Sec-11	ET
Dickey	1-Williams	Sec-25	D&DA
Swoveland et al	2-Hall	....	Jackson
Tidal	1-Seale	Sec-130	BBB&C
Gibson-Johnson	4-Wylie	Sec-5	D&DA
Humble	2-Head Bros.	Sec-57	BBB&C

Clay County

Eastern Pet	2-Bowen	Sec-2041	TE&L

Coleman County

McKanna et al	2-Moody	Sec-10, Blk-665	Scott
Collins et al	1-Thomas	Blk-114	Waters
Moss et al	1-Moss	Blk-70	TCI
Nolan-Pfile	1-Stevens	Sec-5, Blk-52	Coleman
Wilbern et al	1-Edmondson	Blk-166	Holt

Comanche County

Scoggins et al	2-Poteet	Sec-45	D&DA

Cooke County

Wright et al	1-English	Abstract-387	Farris
Robinson	7-Koelger	Blk-13	Scott

(*Continued on Page 46*)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended July 14, 1928

(*Continued from Page 45*)

Eastland County

Company	Well No. Farm	Location	Survey
Allen-Ely	1-Schmick	Blk-4, Sec-1	H&TC
Harris et al	1-Peppin	Sec-3167	TE&L
Panhandle	2-Brewer	....	Finley
Trammell	1-Harrison	Sec-52, Blk-4	H&TC
Limestone County			
Reiter-Lewis et al	1-Ward	....	Varella
Wichita County			
Omerhundro	13-Pace	....	Scott
Wilbarger County			
Consolidated	1-Waggoner	Abst-3	Butler
Phillips	1-Mann	Sec-35, Blk-3	H&TC
Barkley et al	4-Waggoner	Blk-5, Sec-5	H&TC
Barkley et al	3-Waggoner	Sec-5, Blk-5	H&TC
Waggoner Farm	4-Waggoner	Sec-5, Blk-5	H&TC
Waggoner Farm	5-Waggoner	Sec-5, Blk-5	H&TC
Cosden	23-Waggoner	Sec-31, Blk-4	H&TC
Texas	357-Waggoner	Sec-33, Blk-4	H&TC
Consolidated	6-Waggoner	Sec-5, Blk-5	H&TC
Texas	10-Waggoner	Sec-24, Blk-4	H&TC
Texas	11-Waggoner	Sec-24, Blk-4	H&TC
Texas	12-Waggoner	Sec-24, Blk-4	H&TC
Shaw	1-Waggoner	Sec-23, Blk-4	H&TC
Simms	1-Waggoner	Sec-5, Blk-5	H&TC
Consolidated	1-Waggoner	Sec-5, Blk-5	H&TC
Consolidated	7-Waggoner	Sec-5, Blk-5	H&TC
Young County			
Strachan	2-Konwenberg	Sec-1938	TE&L
York State et al	1-Baker	Abstract-2023	Young
Willis et al	1-Gray	Sec-625	TE&L
Long et al	1-Rutherford	Sec-3401	TE&L
Atlantic et al	1-Garvey	Abstract-1719	Compere
Humble	1-Hamilton	Sec-1810	TE&L
Elliott et al	1-Stewart	Sec-229	TE&L

WEST TEXAS AND PANHANDLE

Carson County

Company	Well No. Farm	Location	Survey
Navajo	2-Poling	NWc SW Sec-22, Blk-Y-2	TT
Gray County			
Texas	1-Langham	NEc Sec-1, Blk-B-2	H&GN
Gulf Prod	1-Thut	SWc	Zweig
Lefors Pet	3-Shaw	....	Weeks
Howard County			
Goodley	6-Hooks	NWc SE NW Sec-140, Blk-29	W&NW
Ward	2-Roberts	NWc SW Sec-137, Blk-29	W&NW
Merrick et al	8-Hooks	Sec-140, Blk-29	W&NW
Godley	7-Hooks	Sec-140, Blk-29	W&NW
F. H. E	8-Roberts	SEc NE Sec-136, Blk-29	W&NW
Pecos County			
Roxana	9-Tippett	Sec-102, Blk-194	TC
Sterling County			
Grayson et al	1-Foster	C SE Sec-20, Blk-12	SP
Wheeler County			
Vaughn et al	1-Woodley	C NE SE Sec-21, Blk-24	H&GN
Winkler County			
Southern Crude	T-88-T2-Hendricks	SWc Sec-34, Blk-26	PSL
Southern Crude	T-88-T1-Hendricks	NWc SW Sec-34, Blk-26	PSL
Southern Crude	T-88-M20-Hendricks	SE NE SE Sec-33, Blk-26	PSL
Landreath Prod	4-Hendricks	SEc NE Blk-26, Sec-40	PSL
Southern Crude	T-89-B1-Hendricks	SW NE NE Sec-35, Blk-B-5	PSL
Southern Crude	T-89-F1-Hendricks	SW NW SE Sec-40, Blk-B-5	PSL
Skelly	12-Hendricks	CWL SE Sec-40, Blk-26	PSL
Prairie	6-Hendricks	CEL SW Sec-40, Blk-26	PSL
Skelly	11-Hendricks	CEL W½ SE Sec-40, Blk-26	PSL

Log of the Ice Locked No. 1 Hoye

The following well log is that with the article beginning on the following page.

April 10—Went through hard shell at about 4885 feet. Gas blew all the water out of the hole. Well now blowing with strong pressure of carbon dioxide gas. Washed boiler.

April 11—Testing out well, laying pipe line and pumping water to 500-barrel tank.

April 12—Blowing off well. Changed nipples underneath 6¼-inch control head. Took off 12-inch nipple and put on 18-inch nipple.

April 13—Opened clogged flow line. Placing mud hog pump.

April 14—Ran steam line to mud hog pump. Connecting discharge line from pump to control head.

April 15—Finished connecting discharge line from pump. Started to run flow line to separator. (Note: the well was also making some oil.)

April 16—Filled hole full of water. Driving bridge down through 6¼-inch pipe.

April 17—Driving bridge down through 6¼-inch pipe. Cleaning out and running sand pump.

April 18—6¼-inch pipe bowed or bent around 4300 feet. 6¼-inch tools to 4308 feet. Keeping hole full of water. Took down 6-inch tools and strung up 4-inch tools.

April 19—Well shut in. Opened well up at 9 a. m. Thawing out water lines. Repairing engine. Well now blowing. Laying 6-inch flow line. Well clogged and blew up 6-inch connections.

April 20—Put new blocking under 12½-inch clamps in cellar. Put another 6¼-inch nipple underneath control head. 6¼-inch pipe is settling.

April 21—Filled hole up with water. Drilling out sand or ice bridge about 2000 feet from bottom. Water froze in 6¼-inch and hung up tools. Got tools out.

April 22—Water in 6¼-inch pile froze to top of hole. Thawing out ice in 6¼-inch pipe. Changed sand sheaves.

April 23—Drilling out ice inside of 6¼-inch pipe. Got hung up about 180 feet from top of hole. Run ½-inch pipe and started thawing out ice around tools.

April 24—Thawing out with steam. Tools and ½-inch pipe used to thaw out tools froze in 6¼-inch pipe. Ran 2-inch pipe. Took out ½-inch pipe, 2-inch pipe and tools.

April 25—Well started to blow water and ice out of hole just before midnight. Filled hole up with water and put in 40 sacks (two tons) of salt. (Note: It was the theory that, with brine in the hole, the trouble from freezing would be reduced. However, it made no difference.) Ran 6¼-inch tools to about 1000 feet of bottom. Tools hung up, pulling out, about 1500 feet from top of hole. Jarring on tools. Started thawing tools with bailer and hot salt water.

April 26—Thawing out ice in 6¼-inch pipe to get down to tools frozen in pipe by running in and dumping with bailer hot brine, bailing same out and reheating it.

April 27—Same work as previous day.

April 28—Thawed ice out of 6¼-inch pipe down to tools. Jarred tools up about 200 feet lost tools about 900 feet from top of hole. Line broke at rope socket. Thawing out hole and fishing for tools.

April 29—Cleaning out cellar and cementing same.

April 30—Cementing cellar and connecting up 6¼-inch flow line to separator.

May 1—Cleaning up inside and outside of rig.

May 2—Mixing mud to pump between casings.

May 3—Mixing mud to put between casings. Putting hot salt water in hole.

May 4—Filled hole up with hot salt water. Bailing out salt water. Fishing for 6¼-inch tools.

May 5—Fished out 6-inch tools. Stem broke at weld above box. Fishing for bit and part of broken stem. Fished out part of broken stem.

May 6—Fishing for bit. Cleaned boiler.

May 7—Fished out bit. Well blew some of water out of hole. Filled up hole with water.

May 8—Filled up hole with water, ran tools to about 3700 feet to knock out bridge in pipe. Got hung up with tools and jarred them loose. Tools froze in pipe about 180 feet from top. Tried to jar and thaw them out.

May 9—Thawing ice out of 6¼-inch pipe down to tools by running steam through 2-inch pipe.

May 10—Drilling line wedged in master gate. Line broke and tools dropped back to about 3,700 feet. Fishing for tools.

May 11—Thawing ice with brine.

May 12—Same as previous day.

May 13—Drilling on ice. Tools blew out of hole, broke stem and crown blocks. Blew all connections off in cellar.

May 14—Repairing rig.

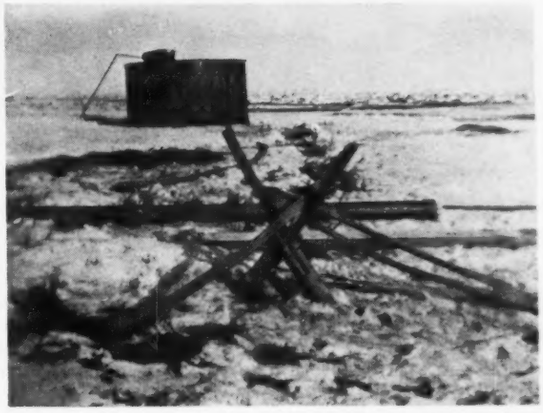
May 15—Same as May 14.

May 16—Replacing connections in

(*Continued on Page* 119)

Dodging Ice and Tools Part of Crew's Job At Colorado's Freak Drilling Well

By Lawrence E. Smith
N. P. N. STAFF WRITER



One of the Continental wells in North Park blowing carbon dioxide gas, below

DENVER, July 16

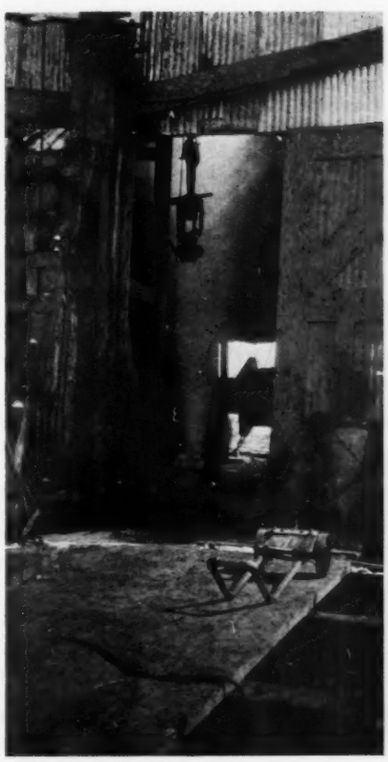
DEVELOPMENT of the North Park field, in Jackson county, Col., moves slowly. This territory in the winter of 1926-27 gained wide attention when the Continental Oil Co. drilled in a well making an enormous quantity of gas with a carbon dioxide content of more than 90 per cent and making also a fair amount of high gravity oil.

The gas, expanding rapidly as it comes from the well, coats everything it touches with ice, even in summer weather, presenting the unusual sight of lead mines, tanks and fittings of pure white.

The Continental has rocked along since that time and has finally got down two more of these freak wells. The Sherman well, discovery on the northerly of two structures, is now shut in. It was rated at about a 40-million cubic foot gas well and about 400 barrels of oil. When shut in last December, after producing upwards of a year, it had declined in oil production to 60 barrels per day, but there was no sign of decline, either in pressure or volume of the gas.

Nearby, and on the same structure, is the No. 1 Peterson well, in the Sw of 1-9N-79W. It developed an estimated 60-million feet of gas. This has been killed, but the well is in trouble. The elevators gave way, dropping 5110 feet of 6¼-inch, 26-pound seamless pipe about 18 feet. Various attempts have been made to swage out the lower part of the pipe, which is all that seems to be damaged. It is now believed that the pipe can be pulled and rerun.

When tools were lost in the Peterson well, in the North Park district, they started fishing. The 6-inch tools had been blown from 5115 feet to within 100 feet of the top and wedged around the wire line. After fishing for two weeks, getting out small bits of wire, the fishing tools let go and went 400 feet over the top of the derrick, breaking two girts at the top above and left. They landed in the position shown above. Nine minutes later the main string came out, knocking off the roof and landing on the walk and casing rack beside the well



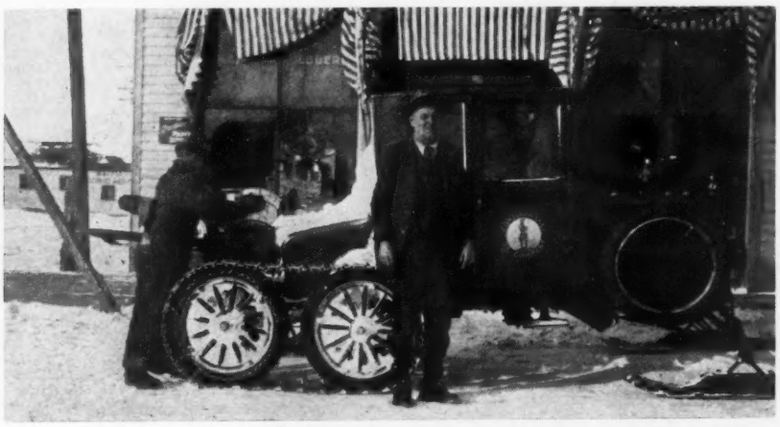
It is the third well, No. 1 Hoye, in the NE of 34-9N-78W, on the South McCallum structure, that is now causing all the troubled thought. The object and intent of the Continental is to drill these wells on below the gas horizon. It is believed that, at about 150 feet lower down, the Dakota sand will be found and, as this sand is saturated with oil on the outcrop over in the mountains some miles away, hopes are high for a large oil field on the two McCallum structures.

Both the Sherman and the Peterson wells have whipped the gas, but the former is in too small hole to carry on down. The Peterson well can be deepened and will be when the pipe trouble is straightened out, but the outcome of the difficulty

on the Hoye well was in doubt as this was written.

Drillers who think they have had trouble should stay around the Hoye well a little while. A little while would be long enough for anyone. More weird things have happened than can be counted. In the attempt to get tools on down and knock out the two bridges—one at around 200 feet and the other at about 4200 feet—something lets go every so often with a report that sounds like all the explosives in the world let off at one time.

Tools or bailer, or whatever happens to be in the hole, leave for other parts and so do the crew. Sometimes the latter do not get away quickly enough and somebody gets hurt. Everyone around the place is nervously apprehensive and the change in tone of the gas whistling up the pipe is sufficient to start a footrace for the county line. H. B. Simcox, general manager of production for the company, says that on a recent two-weeks stay at the well, he developed sprinting ability hitherto unrecognized.



Snow covers the ground much of the year in North Park. Here is Supt. Frank Williams, of the Continental Oil Co., and his flivver converted into a "snowmobile"

When the well hasn't anything else on its mind, it throws pieces of ice. For, in referring to pipe or tools "freezing" in the hole, the driller means exactly that and not that they are merely stuck, as the term implies elsewhere. The well is kept loaded with water to hold down the gas. Two strings of pipe are cemented in the hole, but there is a leak and gas escapes around the outside of the pipe. Ice forms inside the pipe—it freezes solid down to around 200 feet but from there on there seems to be no ice. That is what causes the trouble. If a string of tools starts to move out of the hole from around 3000 feet, say, the men on the floor have time to get away. But it doesn't take long for the tools to come from 150 or 200 feet.

Time after time the hole has been thawed out to get at that bridge highest up. What is stuck there is not known. Then, after thawing, the tools have been run in the hole and started to pounding on the bridge. The hole will freeze up above the tools and the thawing job will have to be done again. All at once the pressure which has been building up under the ice will remove tools suddenly. And, to vary this monotony, most of the water will be blown out of the hole and that job will have to be done again.

The bridge around 4200 feet may be the result of sidetracking of some 360 feet of 6¼-inch pipe in the process of drilling to the present total depth of nearly 4900 feet. And again it may be due to the casing shoe having broken. Whatever it is, it seems fairly solid and will cause further trouble when the upper bridge is freed and work started on the deeper one.

The casing record of the Hoye well shows that the drilling of these 5000-foot holes is no picnic. It is as follows:

24-inch	86 feet
20-inch	276 feet
15½-inch	997 feet
12½-inch	1,705 feet
10-inch	2,784 feet
8¼-inch	4,134 feet
6¼-inch	4,860 feet

No better recital of the difficulties on this well since the gas was struck early in April can be found than on the daily report written by the drillers. It provides a first hand account of the trouble written by the men who were right there every day. And if any other drillers anywhere have had more soul-trying experiences than is set forth here, Messrs. Jackson and Peters would like to know about it. Their log is published accompanying this article.

Since the period covered in the log an impression block was run on the bridge and it was thought that, by making a hook from a center rope spear, the bridge could be pulled out. It failed to do the work and the drillers went back to using 4¾-inch tools. Shortly thereafter all the water blew out of the hole and they started in on the same old wearing round of killing the well, losing the tools under ice and thawing them loose.

Some considerable reward should come from such effort and expense. All this trouble is being contended with in the hope that an oil field will be developed. Many rumors have been in circulation as to the plans for utilizing this freak gas for refrigerating purposes, as "dry ice," or compressed carbon dioxide shipped in cylinders. While some investigation of this possibility has been made by the company, officials doubt that anything will be done in the near future. Primarily they are concerned with getting one of these wells down to the Dakota sand.

New Publications

"The Geology of Petroleum and Natural Gas," arranged by Ernest Raymond Lilley, associate professor of geology at New York University, and published by D. Van Nostrand Co., Inc., New York ($6 net), is a compilation of data dealing compactly with the nature, origin and accumulation of petroleum.

Structural conditions found in the different oil producing regions are discussed, together with the effects of modifying agencies. In addition to the text material of the book the author utilizes many maps, profiles, geologic sections and diagrams to clarify understanding of detailed data.

The book was written, the author explains, to supply a single volume in which would be contained brief statements of principles of geologic science and examples illustrative of the application of those principles. It is valuable for ready reference on geologic problems and brings together much data previously available only through extensive libraries and out-of-print literature.—P. W.

Two Still Cleaners Killed

TULSA, July 14.—George Killion, 40, and T. J. Benn, 37, still cleaners at the Mid-Continent Petroleum Corp. refinery here, were killed while engaged in cleaning out a still July 13. A gang of pipe fitters had installed a new valve on the pump-in line after the still had been shut down for cleaning and are thought to have left the valve open. Hot oil being pumped to an adjacent still for rerunning entered the open still while the men were at work.

TULSA, July 16.—The Cushing Refining & Gasoline Co. plans to erect a natural gasoline plant in the Crescent area of Logan county. The plant will be built in Twp. 18-4W. The exact location and size of the plant has not been determined.

Pipe Line Pumping

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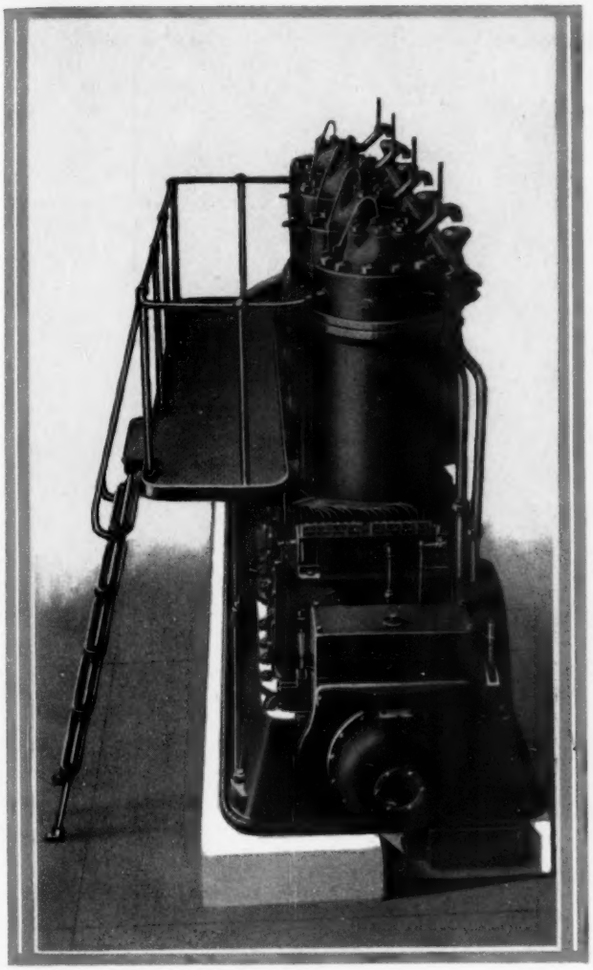

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Write for the interesting booklet, "A Comparison of Diesel Principles."

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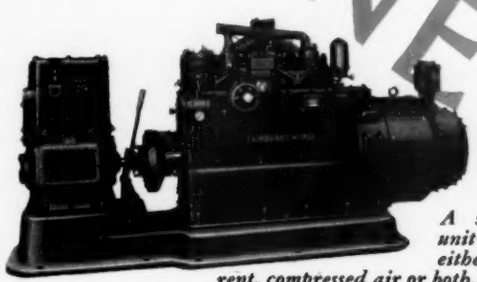

A small compact unit for furnishing either electric current, compressed air or both. Photo shows 30 kw. Diesel generator set clutch connected to two-stage compressor with capacity of 54 cu. ft. of free air per minute against 250 lb. pressure. Compressor can be furnished connected to 20 or 40 kw. generator set or to 2 cylinder engine

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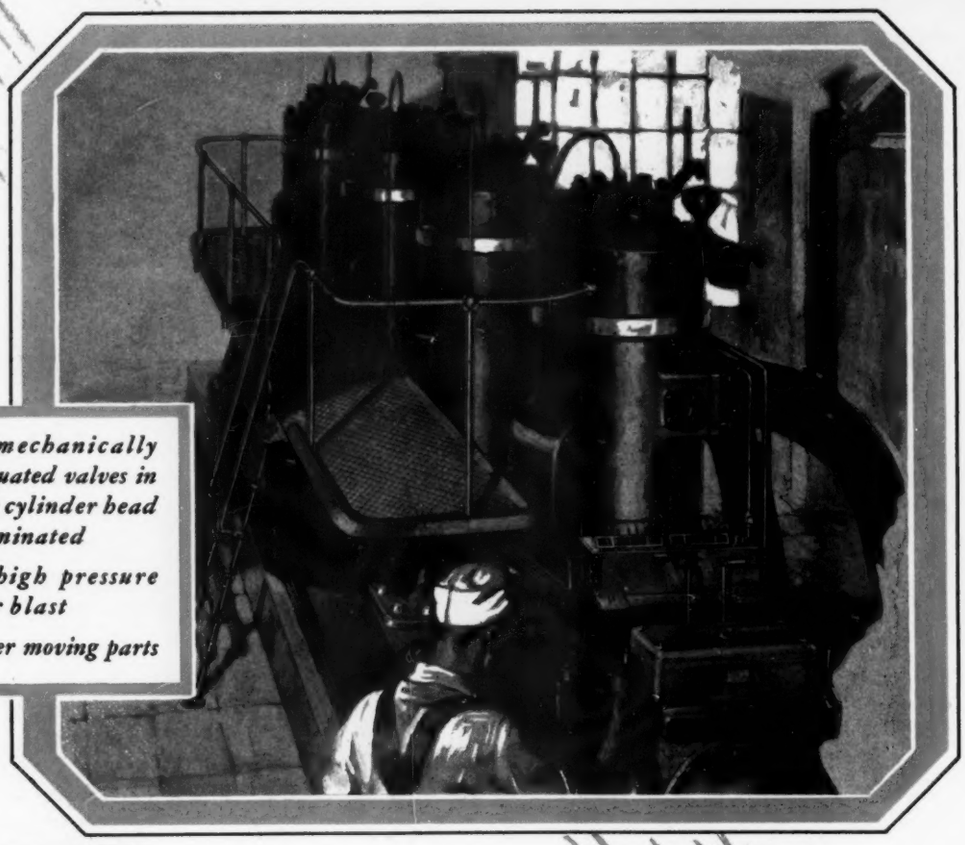

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AOA023

The gasoline plant of the Tropical Oil Co. in the jungles of Colombia

United States Driller Proves Superiority In South American Fields

Staff Special
TULSA, July 12

IN SOUTH AMERICA, as elsewhere throughout the oil producing world, the American driller is proving his superiority, both at making hole and in overcoming the obstacles. William Eustice, of the Parkersburg Rig and Reel Co. who has traveled much in the South American fields, has observed that no matter what the nationality of the company engaged in oil field work, or where the scene of their operations may be, the American driller is considered the standard of the world.

It is difficult for one who has never toured South America to visualize the magnitude of the country under exploration, Mr. Eustice observes. From Maracaibo, in Venezuela, to the southernmost fields in the Argentine is about 4,000 miles on an air line, with all varieties of climate encountered.

The largest oil fields in South America are in Venezuela, Colombia and Peru, and the Argentine, where the federal government is the largest producer. Bolivia and Chile are both the scene of some wildcat drilling, but to date no production of commercial importance has been found.

The major portion of the oil in the Argentine comes from the two fields —Plaza Huincuil, about 400 miles west of Bahia Blanca, and from Comodoro Rivadavia, which is about 1,000 miles south of Buenos Aires. The latter field is more prolific at present. The Argentine government, which is not favorably disposed toward foreign development of its petroleum resources, is the largest producer and refiner in the country. It also operates the pipe line facilities, which run such oil as is not used at the local refinery, to Bahia Blanca. A 12,000 barrel a day refinery is also being built at the city of La Plata. The government policy of refusing large concessions, and of letting private capital carry the load of wildcatting, coupled with the fact that the nearest approach to a petroleum law in the country is an old mining law that is not sufficiently definite or adapted to the needs of oil development to warrant foreign capital making the expenditures necessary for exploration has retarded active development to a large degree. The Railways Petroleum Co., (British) the Royal Dutch-Shell Co. and the Standard Oil Co. of New Jersey have some holdings in both these fields; Railways Petroleum Co. being the most active.

Both rotary and cable tool drilling methods are employed in the Argentine fields, although the cable tools do more of the drilling in the Plaza Huincuil district. The flowing life of the wells is not long, and the dry gas encountered in large quantities is recycled in an effort to liven the oil. While the drilling methods of the government are not perhaps as efficient as those of a good contractor, they are in the main, modern.

However, one production practice of which it is guilty would cause a lifting of the eyebrows in any field in the United States. When the wells are being swabbed, instead of using the control head, oil saver and lead lines familiar to oil workers in this country, the rigs are boarded up and the oil swabbed out on the floor, where it is ditched to the tanks.

OIL in Peru was obtained first in 1903. The fields are in the desert, at Lobitos, where the Lobitos Oilfields, Ltd. is the principal producer; and at Negritos, where the International Petroleum Co., Ltd., is the controlling factor. Incoming supplies are shipped to Talara, which lies between them on the coast, and are transported to their final destinations by a narrow-gauge railway maintained by the companies. The camp of the International is said to be the equal of any in the world.

Native drillers work under the supervision of North American tool pushers, and are generally considered efficient. Cable tool drilling is more common, although the rotary is gaining in favor as more is learned about the formations. One of the deepest holes in South America was drilled in the field at Negritos. The rotary was used down to about 5,000 feet, where 8-inch casing was set and cemented, after which cable tools continued the drilling to a final depth of 6,204 feet, where the test was

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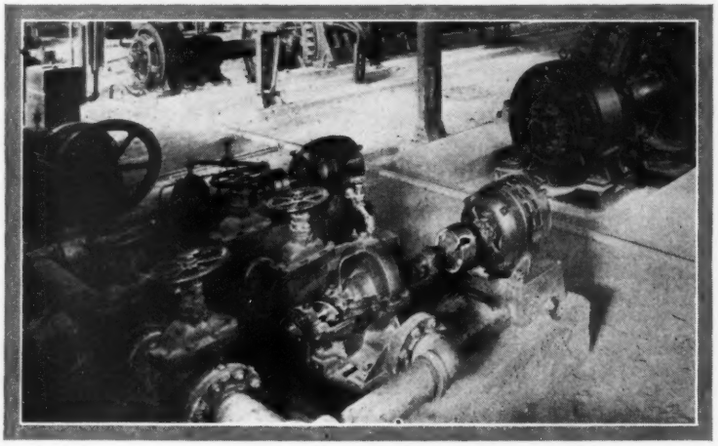
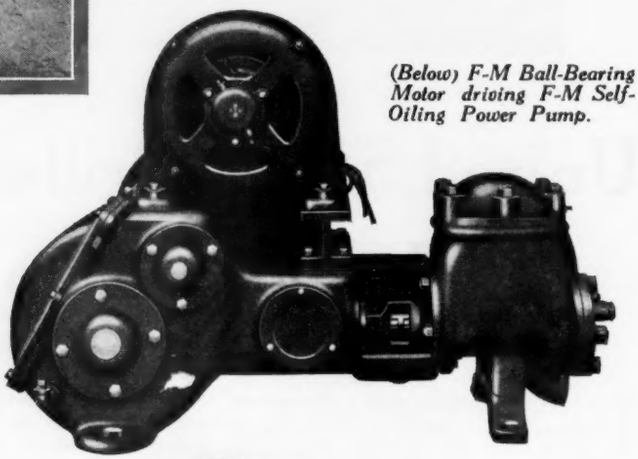


ball-bearing MOTORS

View at left shows F-M Ball-Bearing motors driving F-M Ball-Bearing Centrifugal Pumps at McCamey, Texas.



(Below) F-M Ball-Bearing Motor driving F-M Self-Oiling Power Pump.

Low Maintenance Cost Means True Economy

F-M Ball-Bearing Motors for the oil industry are built to effect the lowest possible maintenance cost—which means that these motors are truly economical in service. The ball-bearing construction, sturdy frame, extra heavy shaft, and dirt and moisture proof bearing housings are notable features in the long and trouble-free service of these motors.

F-M Ball-Bearing Motors are available in types and sizes for all purposes, also in a wide range of "Unit-Built" motor-pump combinations.

F-M Ball-Bearing Motor driving compressor used on high pressure air and gas lift.

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abandoned as dry, still in an 8-inch hole.

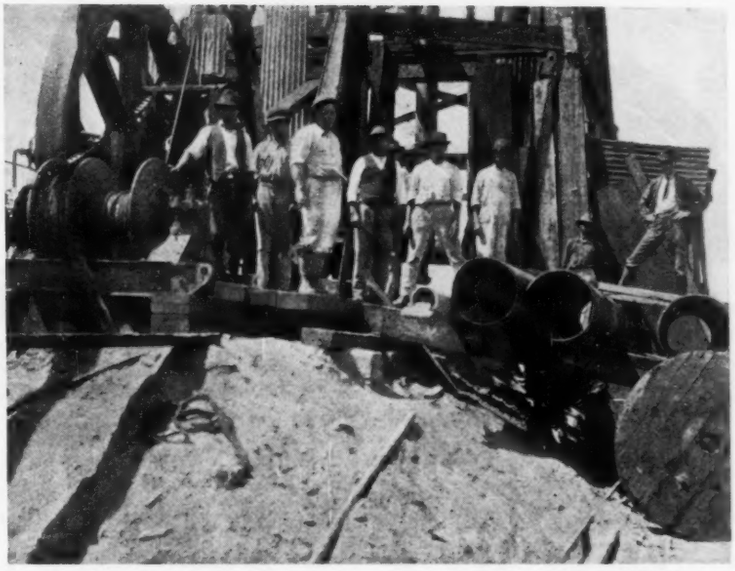
The pipe and gathering lines are owned by the International, which runs the oil of the Lobitos company, as well as its own, to Talara. There most of it is refined, put in tins made in the International factory, and crated for distribution. Peru not only produces enough oil for its own needs but enough to export large quantities to the Argentine and to Canada.

Colombia, north of Peru, is an increasingly important oil producing country, with large fields near Barranca Barrmeja. The 10-inch pipe line of the Andian National Pipe Line Co., laid through 360 miles of swamp and jungle, is a masterpiece of engineering, and is the only outlet for the oil produced from the fields in the interior. This pipe line capacity is being doubled. Cartegena is the terminus of the line.

A small refinery owned by Tropical Oil Co. supplies domestic needs, but the major portion of the oil is shipped to the United States and Canada. Practically all drilling is done with rotary tools, wells being completed at around 2,500 feet, with an initial production up to 2,000 barrels per day. The production holds up well, and it is expected that oil will be produced here for some time to come. Most of the land along the river from Barranquilla to the present production is under lease, but there is little development of a wildcat nature under way at present.

Much of the passenger traffic between the coast and the fields is carried by hydroplane. Incoming freight is landed at Cartegena, where it is shipped up the river to terminals near the fields, and finishes its journey by truck or ox and mule power. Being close to the equator the country is subject to rainy seasons when nearly everything is flooded; to dry spells when there is not enough water in the river to permit the shallow draft river boats to navigate; and to great heat, with its attendent tropical diseases. The greatest care is taken that living and sanitary conditions are kept at a high standard. Nearly all food is shipped in from the United States. All forms of sports and games are encouraged. The camps are equipped with hospitals, a refrigeration plant as well as a club house with a swimming pool and tennis courts as a side issue.

Venezuela with the well known Lake Maracaibo field, is the northern limit of the production in South America. The lake, some 30 miles inland, has fields on three sides and in the middle. The Venezuelan government has been favorably disposed to exploitation of its oil lands, and as a result of this and of the fact that oil in considerable quantities has been found, more companies are operating in Venezuela than elsewhere in South America.



A native drilling crew of Peru, with their North American tool pusher

Venezuelan oil can be laid down considerably cheaper on the Atlantic seaboard than can Mid-Continent crude. Shipments of about 200,000 barrels per day are leaving the Maracaibo district. Inasmuch as the amount of South American crude that is available is governed by the amount of tank steamers, it is not to be feared that the increase during the present year will be in excess of a total of 25,000 barrels a day, which is about the same amount of new tankers now building, or for which orders have been placed.

Due to the variety of nationalities represented by the operating companies, to the large amount of work going on, and to the fact that the constant stream of tankers coming and going keeps the locality in closer touch with the outside world, the Lake Maracaibo district takes on a more metropolitan air than is usual with tropical oil areas.

While at present each company operates its own hospital, a large community hospital is under consideration. There is a country club with a golf course, swimming pool and all the trimmings that we are accustomed to find in this country. All sorts of diversions are offered the men, and much of the monotony of tropical existence is thereby removed.

One feature which all South American fields have in common is that of expense. Practically all supplies of any nature must be shipped in from the United States, which adds the considerable item of duties to the original cost and transportation. In order to get correct results from the men, the best possible living conditions must be provided, and much money has been spent in erecting modern, sanitary camps, equipped with comfortable living quarters, hospital facilities, and recreation centers.

A location in Lake Maracaibo, where scouts need canoes

Second Deep Pay Well At Cotton Valley

HOUSTON, July 12.—The second Trinity pay completion of the Ohio Oil Co. in the heart of the Cotton Valley, Louisiana, field tested more than 400 barrels daily, initial production, when drilled in early this week at 4734 feet. The flow increased later and it was believed the new well might equal the Ohio's deep pay discovery on the Bodcaw Lumber Co. tract, in 14-21-10, which made 950 barrels in a 12-hour test of production. The discovery well, No. 38, was completed several months ago. The new well is No. 39.

In Richland parish, the Gulf Refining Co. of Louisiana tested 51,000,000 cubic feet of gas daily in its No. 3 R. R. Rhymes, in 28-17-6.

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Our Industry—A Page of Facts and Personalities

By Paul Wagner

National Petroleum News

The public is happily beyond the period when a blanket condemnation of industry is popular, J. Edgar Pew of the Sun Oil Co., Dallas, recently told a group of oil men assembled at Kansas City.

"The oil industry," he said, "needs no defense of the integrity of its members, no more than does any other great industry; the exceptions to this statement being no more frequent than they are in other industries or professions.

"I hope the day has gone forever when in this great country political capital can be created by the condemnation of any industry, or of any class, or of any race of people, as such."

Mr. Pew, as a former president of the American Petroleum Institute and as a leader in its standardization work, has worked earnestly toward the industry's acceptance of a definite responsibility to the public as well as to the stockholders of the various component companies.

* * *

L. K. Laney is now stationed at Fort Worth as producing department consulting engineer in the north central Texas division of The Texas Co. He was formerly at Houston.

* * *

J. Tom Devanney, formerly with the Magnolia Pipeline Co., has been transferred to the producing department at Yale, Okla., where he is assistant to Supt. Joe Kuhn. He succeeds Clyde Brown, resigned.

* * *

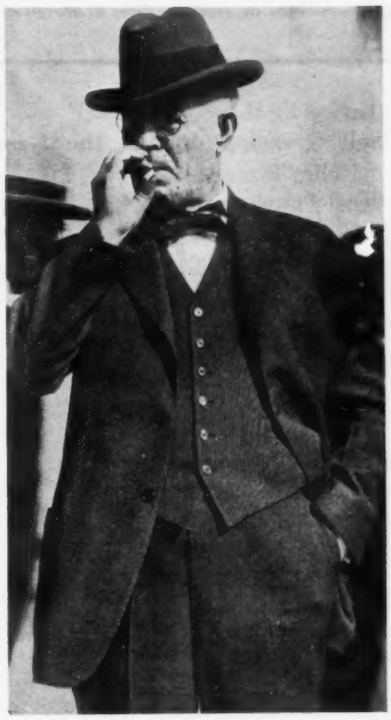
R. H. Carr is now in general charge of the production engineering department of the Pure Oil Co., succeeding H. C. O. Clarke, who was sent to Venezuela to take charge of the company's South American interests. Mr. Carr is also in charge of the natural gasoline division.

* * *

W. H. Lyne, Jr., executive of The Texas Co. of Mexico, S. A., at Tampico, finds long distance motoring a pleasure. Recently, he drove from Tampico to Houston and back again in his car.

* * *

Frank O. Prior, formerly electrical superintendent of the Midwest Refining Co., Casper, is now assistant to A. W. Peake, president of the Dixie Oil Co., Inc., direct subsidiary of Standard Oil of Indiana, at Shreveport. Mr. Prior is a Leland Stanford university graduate. He had been with the Midwest since 1919.



WILLIAM T. CUSHING

William T. Cushing, known throughout the pipe line division as "Bill," has joined the W-K-M Co., Houston, as special sales representative, handling pipe cleaning machines, backfilling equipment and other supplies marketed by his employers. Mr. Cushing recently resigned from the Dearborn Chemical Co. to take up his new work.

Mr. Cushing was for years identified with pipe line construction for The Texas Co. in the southwest. He afterwards helped to build the Humble Pipeline Co.'s original Ranger-to-the-Gulf system.

* * *

James Gilluly and John B. Reeside, Jr., are the authors of United States Geological Survey professional paper 150-D, which deals with sedimentary rocks of the San Rafael swell and adjacent areas in eastern Utah. Rocks exposed at the surface in the districts discussed in the paper, range in age from Pennsylvanian to Upper Cretaceous.

* * *

Frank Ward has returned to Tampico from New York as manager of "El Sol" Oil Co., which operates in the general Panuco district. He formerly was identified with affairs of the English Oil Co., in Mexico.

Fred H. Wickett and J. J. Cotter, who were formerly closely associated in the official family of the Pan American Petroleum & Transport Co., are again together. Mr. Cotter was recently elected president of the American Maracaibo Co., of which Mr. Wickett is chairman of the board of directors. Besides the two mentioned the board consists of William H. Chadbourne, Edward R. Tinker and Frank Finsthwait.

* * *

Michael C. Watson, long identified with oil operations in the Tampico district, has left Mexico for Venezuela. He will be in charge of the Venezuela Gulf Oil Co.'s tank farm at Maracaibo. In the nine years he spent in Mexico, Mr. Watson was first with the Mexican Gulf Oil Co. and later with the Mexican Eagle Oil Co., Ltd. (El Aguila.)

* * *

J. I. Kisling, H. G. Tallman and D. A. Nunn composed the first inspection committee appointed for examination of equipment on all leases of the Pure Oil Co., in the Mexia-Powell-Wortham district of Texas. Now each farm boss is replacing worn equipment and generally correcting conditions in line with committee recommendations.

* * *

J. G. Richards of the Orinoco Oil Co., through which the Pure Oil Co. operates in Venezuela, is spending a vacation on his west Texas ranch.

* * *

Stone Steele, formerly of the production department of the Mexican Gulf Oil Co., Tampico, has been transferred to the Venezuela Gulf Oil Co., Maracaibo, another arm of the petroleum interests of the Mellons of Pittsburgh.

* * *

John D. Prevo, dean of scouts in the San Antonio territory, has been transferred from his earlier headquarters at Sequin, Texas, to Rankin, Upton county, by the Mid-Kansas Oil & Gas Co.

* * *

Mike Gomez of the refinery purchasing department of Humble Oil & Refining Co. is frequently heard over radio station KPRC at Houston. His bariton voice is becoming increasingly popular.

INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

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Guthrie, V. B. 960.8

"'Sell Greasing Job at the Gasoline Pump' Is Denver Jobber's Policy"

National Petroleum News, July 4, 1928, pp. 93-98.

The article relates how the Denver Powerine Co., Denver, Colo., sells greasing jobs by having a man at the pumps who knows at a glance if his customer is in need of such work. Thus the customer is served throughout by the same attendant. The grease pits also serve as the training ground for attendants, and the men at the pumps know lubrication. The article also tells how the company decorated its downtown station last Christmas; a sight that drew persons from all over the city. Advertising is discussed also. The Denver Powerine Co. has used newspaper space for 12 years. For instance, when the Two Black Crows were popular on the stage the company used them and their "patter" in advertising gasoline.

Tilton, John L., Prouty, William F., Tucker, R. C., and Price, Paul H. 305-111.14

"Hampshire and Hardy Counties (W. Va.)"

West Virginia Geological Survey, November, 1927.

This is one of the series of county reports which have been prepared and published from time to time over a period of many years. As in the case of those previously published, this volume treats of the history, geology, resources and development of the two counties. Descriptions of the geologic sections are comprehensive. A separate case contains numerous maps. Neither Hampshire nor Hardy county produces oil nor gas.

J. C. Chatfield 778.2

"Natural Gasoline Production of U. S. Increased 20 per cent in 1927"

National Petroleum News, March 21, 1928, p. 25.

Review of 1927 natural gasoline production statistics. The percentage of natural gasoline production to the total supply of motor fuel is given and market price of Grade A is compared with that of U. S. Motor Gasoline.

Halbert, Ward K. 934.34

"Decoration and Extra Pay Given Station Salesmen for Merit in Service"

National Petroleum News, June 20, 1928, pp. 27-28.

The article describes the merit system of the Pure Oil Co., in Cincinnati, where extra pay is given service station attendants who come up to a prescribed standard of service. Thus all attendants may participate in extra pay and in decorations. The merit badge is a brass shield, 1½ inches in diameter, and inscribed "Master Service." And the wearer of the badge draws 2½ cents an hour extra pay. The badge brings the first pay advance. It may be won as quickly as an attendant adapts himself to the service desired by Pure Oil Co. The attendant is observed several times before being decorated. Also, several observations are made before it is taken from a man.

Henderson, George G. 305-111.42

"Geology of Tom Green County"

University of Texas Bulletin No. 2807, Feb. 15, 1928.

Tom Green county is a little west of the central part of the state. San Angelo is the county seat. The report includes detailed sections of 11 formations exposed in the county, of Permian, Cretaceous and Pleistocene ages. Oil and gas possibilities are briefly covered. The statement is made that shallow showings of oil in wells in the northwest part of the county and near Christoval in the south-central part give some encouragement that shallow oil may be found although ten wells drilled at the time the report was made had found only showings. The report includes a geologic map of the county.

National Petroleum News 963.2

"Brake Tester Draws Desired Oil and Gas Trade"

National Petroleum News, July 4, 1928, pp. 101-102.

A brakometer at the super service station of Ed. Stumpf, Lancaster, Pa., is described. A room had been outfitted with wicker furniture, rugs, and ferns for the comfort of patrons having brakes tested. The test has been given official recognition by the state. Prices of brake testers, installations, and outfitting a brake testing department are given from the experience of a brake testing company in Cleveland.

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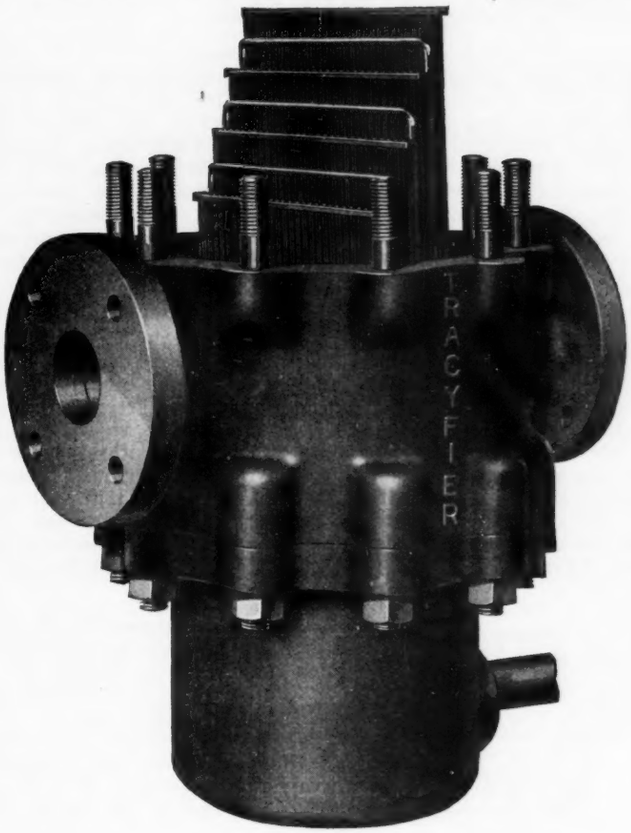

ILLUSTRATED at left is a Pipe Line Tracyfier with cover removed and baffles partially withdrawn. It functions in the same way as the larger Tracyfier shown below. In a word, the steam—air—gas or vapor in its journey through the Tracyfier encounters a multitude of metal baffles and is forced to yield its entrained content of dirt, water, oil, gasoline, etc.

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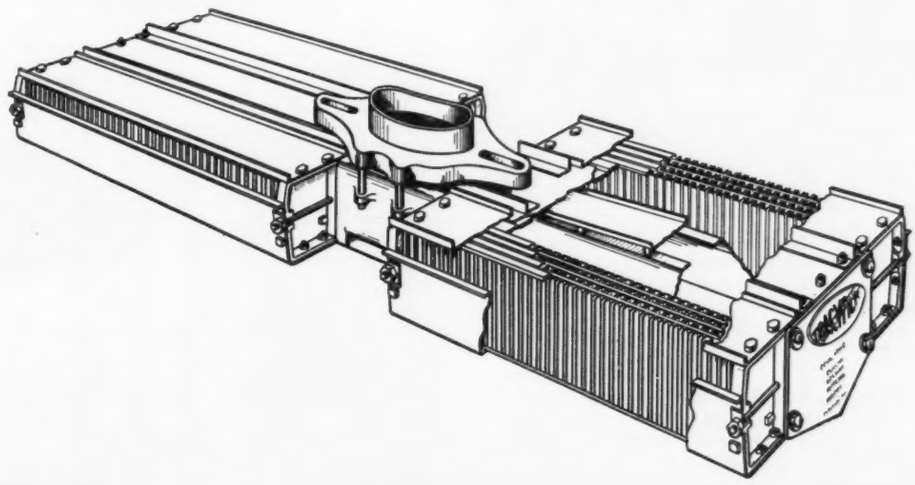


TRACYFIER
THE STEAM PURIFIER

Phillips Finds Dissolved Sulfur Gives Uniform Results in Treating

By J. C. Chatfield
N. P. N. STAFF WRITER

AMARILLO, July 13

WITH the treating method employed at its Borger plant, the Phillips Petroleum Co. has had no difficulty in producing gasoline which will meet the most exacting tests. As mentioned in a previous article (July 4 issue, page 28) the clay filtration treatment produces a gasoline far better than 30 color which is sun-stable. After further treatment the gasoline is sweet to doctor and there is no discoloration of copper boiled in the gasoline for three hours.

After the vapor phase treatment for color there are two steps to the treatment for doctor and corrosion tests. The first is a caustic wash which is given the gasoline as it leaves the accumulator or run-down tanks. Three towers are used for washing the gasoline. Two 5 by 30 foot towers in series provide the caustic wash and a water wash is given in a 5 by 18 foot tower after the caustic wash. A Mason liquid level control operates a centrifugal pump which withdraws gasoline from the run-down tanks and forces it through the wash tanks and to the agitators.

Any gasoline which reaches the run-down tanks not up to the 30 plus color standard is pumped back over the top of the bubble tower and re-run. In such an emergency the usual flow of gasoline through the wash tanks is halted.

The treating section of the Phillips plant has been planned so that one man is able to treat about 3,000 barrels of gasoline on a single shift. The equipment used has been designed to permit rapid work and accurate results.

The treating plant consists of three agitators and a sulfur tower provided with a circulating system with submerged spray nozzles for agitation and quick contact rather than the old method of agitation by compressed air. Three tanks are used for preparing and regenerating the doctor solution and one tank is used for preparing the caustic.

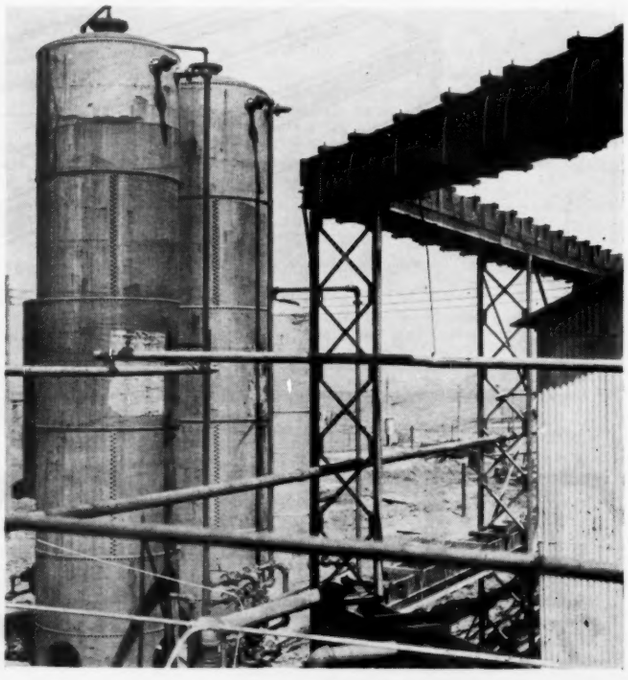
To avoid the possibility of contaminating treated gasoline with unfinished material each agitator has its own pump system. The pump for each agitator is manifolded so as to permit pumping from any of the chemical tanks and to any of the storage tanks for finished gasoline.

Each of the agitators has a capacity of 1,100 barrels. There are 16 submerged spray nozzles in the tank through which sulfur-bearing gasoline and doctor solution are forced into the untreated gasoline at the beginning of the treating cycle and through which the mixture of chemicals and gasoline is forced as the circulating pump is started. These spray nozzles have been found to give an intimate mixture of chemicals and gasoline within 5 minutes. The same type of nozzles is used in the caustic wash tanks and the water wash tank mentioned before.

The agitators are not lined with lead since no acid is used in the treating. In addition to the usual draw-off line from the bottom of the cone there is a second draw-off line from the side of the agitator just above the cone. This line is equipped with a swing-line so that the operator may pump from the agitator above the level of settled doctor solution or water if desired. Draw-off lines are arranged so that the pump may pull through either or both lines.

M. P. Youker, superintendent of refineries for Phillips, has come to the conclusion that he can control the treating reaction much more closely if he uses dissolved sulfur instead of flowers of sulfur to break out the doctor. His experiments have shown that with flowers of sulfur it is difficult to add enough to get the reaction without causing some of the sul-

At left—Caustic and water wash towers through which gasoline passes from the accumulator tanks to agitators



At right—Battery of three agitators used at Phillips refinery. Building at left houses chemical mixing tanks, sulfur tower and circulating pumps. N. P. N. Staff Photos

In the operation of his plant the alert refiner must be guided by many market factors

One factor, however, remains constant, no matter how widely market prices fluctuate—and it is this: He profits most who makes each barrel of crude yield the most gallons of good gasoline providing he does so at lowest cost per gallon

This means Dubbs Process yields and Dubbs Process cost

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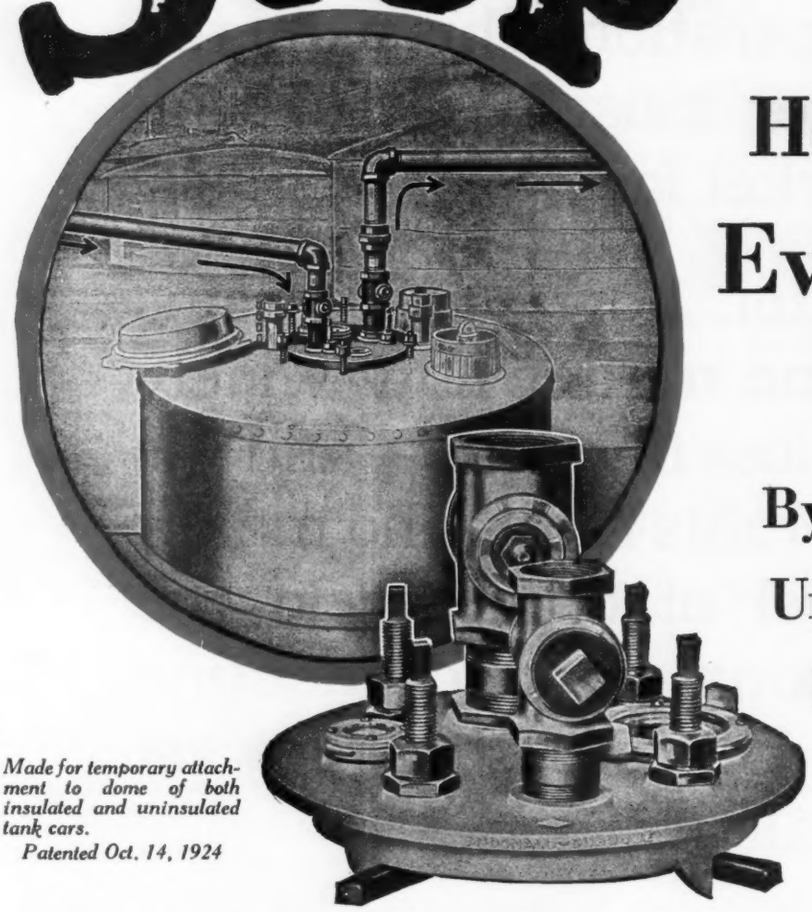

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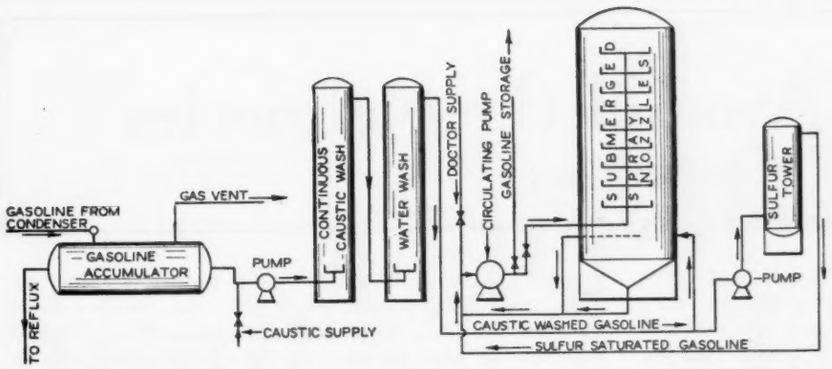


Flow chart showing method of operating gasoline treating plant at the Phillips Petroleum Co. refinery at Borger, Texas

fur to become dissolved in the gasoline and cause a certain corrosive effect in the finished product.

At the Phillips plant dissolved sulfur is used exclusively. A 4 by 12-foot sulfur tower which is charged with roll or rock sulfur is used in the system. This is arranged so that raw gasoline may be pumped through it and into the suction side of the agitator circulating pump. As the gasoline is pumped through the sulfur tower at a pre-determined rate a certain amount of the sulfur is dissolved in the gasoline. Being in liquid form it mixes instantly with the gasoline and doctor solution in the agitator and gives a quick reaction.

In operating practice the dissolved sulfur is charged to the agitator at the beginning of the treating operation.

The sulfur tower pump is started when the treater begins charging doctor solution to the agitator and is continued until a sufficient quantity has been added.

After a batch of doctor solution has been used for treating it is withdrawn to a tank in the treating house for regeneration. In the regenerating tank it is blown with air to put it back in condition. Steam coils are being installed in this tank so that the spent doctor can be raised to 180 to 200 degrees F. at which temperature Mr. Youker believes the regeneration will be more complete.

Theoretically the lead in the doctor solution should never be exhausted in treating but the caustic does wear out. If a successful method could be worked out of separating the spent caustic from the lead Mr. Youker is of the opinion that the lead could be used indefinitely, adding only enough to make up small losses in the system or due to imperfections in the caustic separation.

One reason why a single treater can handle the gasoline production of the Phillips plant is the fact that three agitators have been installed and the number of pumping operations is cut down. At the end of the treating shift the three agitators are empty. The stillman charges gasoline from the wash towers direct to the first agitator until it is full and then switches to the second.

The next morning when the treater comes on the job there is a full agitator of gasoline ready for him. A second agitator is nearly full. By the time he has treated the first two and pumped the finished gasoline to storage the third agitator is ready. A full agitator of gasoline can be treated and settled ready to be pumped to storage in two hours.

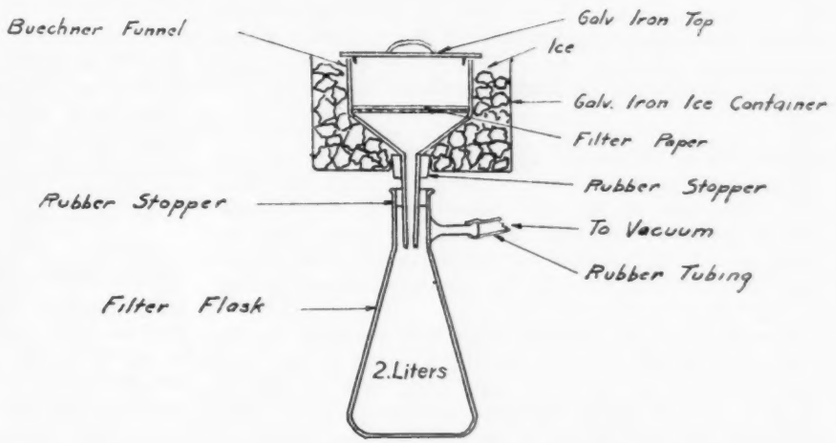
Moody-Seagraves Interests Acquire Gas Utilities

HOUSTON, July 12.—Controlling interest in the southwestern group of E. L. Phillips utilities companies has been acquired by the Moody-Seagraves interests of Houston, it was announced by W. L. Moody III, July 5. The deal, which was said to involve about $21,000,000, was completed through purchase of all the common stock owned by the E. L. Phillips interests in the enterprises affected.

The group of utilities is controlled by the Moody-Seagraves interests through the United Gas Co., including the Houston Gas & Fuel Co., the Houston Gulf Gas Co., the Dixie Gulf Gas Co., Dixie Gas & Fuel Co., Southern Gas Co., Southern Gas Utilities Co., and Western Gas & Fuel Co. All except the Dixie companies were controlled by the E. L. Phillips interests prior to the deal announced by Mr. Moody.

Odie R. Seagraves of Houston has been made president and Mr. Moody vice president of the several enterprises, except the Dixie Gas & Utilities Co. Mr. Moody is president of the Dixie and Mr. Seagraves vice president.

Amorphous Wax Extraction



HEREWITH is given a laboratory method of extracting amorphous wax from oil with a filter aid, developed by James W. Weir, 359 Mansfield Ave., Los Angeles, and a drawing of the apparatus for carrying out the operation. Directions given by Mr. Weir for the method follow:

Treat reduced wax distillate.

Dilute with naphtha (200 I. B. P.—400 E. P.) 80-20

Add one-half pound per gallon Super Filter-cel.

Chill to 0 degrees F. or below in small ice cream freezer.

Filter through ice-jacketed Buechner funnel into filter flask as illustrated, keeping filter cake from cracking by pressing down and sealing cracks with spatula.

Reduce filtrate to flash in steam still—preferably under vacuum (Result 35 to 40-degree cold test oil).

Wash filter cake with hot naphtha (200 I. B. P.—400 E. P.) and filter to recover Filter-cel.

Steam still filter—wash filtrate to separate wax and recover Filter-cel-wash naphtha.

Above laboratory results will not equal plant operations where pressures and temperature can be controlled but will be sufficiently indicative.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

THE Independent Oil & Gas Co., Tulsa, is about to install a pipe still having a capacity of 5000 barrels a day at its Okmulgee refinery. Contract for the still has been awarded to the Graver Corp., East Chicago, Ind., according to announcement of the latter company. J. M. Wadsworth is general manager of the Independent Oil & Gas Co.

* * *

MAX B. MILLER & CO. INC., has taken exclusive rights to license refiners in the United States to use the Gyro vapor phase cracking process as developed by the Pure Oil Co. This is according to a letter from Max B. Miller. The decision to take it on, according to Mr. Miller, resulted after six months' investigation.

Mr. Miller is known as the pioneer in adapting the use of centrifugal machines to the dewaxing of bright stock and long residuum and as the licensing agent of the contact filtering processes. The Gyro process was described in the Nov. 16, 1927, issue of NATIONAL PETROLEUM NEWS, page 20.

* * *

D. F. GERSTENBERGER, formerly refinery manager of the Louisiana Oil & Refining Co., Shreveport, and the author of many articles on practical refining that were published exclusively in NATIONAL PETROLEUM NEWS, is now manager of the refinery of the American Refining Co. now known as American Refining Properties and being operated by a creditors' committee.

* * *

THE STANDARD OIL CO. of California has adopted daylight saving, that is turning the clock one hour ahead during the spring and summer months, for its main offices in San Francisco. For several years past the employes of the company's 100,000-barrel a day Richmond refinery have enjoyed the benefits of an extra hour of daylight.

The Standard Oil Bulletin states that attention on the west coast is now focussed on the daylight saving plan for the first time and it seems likely that it will be adopted for the entire Pacific coast before long. The advantage to the refiner of encouraging the tourist to drive an hour longer every day and hence use more gasoline, has been pointed out before.

* * *

THE practice of stringing emergency guy wires from the towers of Dubbs cracking units and similar pieces of equipment, down which workmen may slide if trapped by fire, is becoming general. Pure Oil Co. has just installed them on the Dubbs units at its Ardmore, Okla., refinery. Each guy wire is fitted with a "bos'n's chair" or board seat which rides the wire on a pulley. The sky cowboy who takes this method to reach the ground gets a ride at terrifying speed but is able to land without injury. I have seen these same simple fire escapes on the equipment at the Marland refinery and other plants. It is another step toward making the refineries as safe work places as possible.

HIRING divers to recover pump motors is rather unusual refinery practice but it was resorted to by Imperial Oil Ltd., when floods shut down its Montreal refinery this past spring. Ravages of the flood are described in the June issue of Imperial Oil Review. The pump house was flooded and the motors covered. Stills were unable to operate for a week. The pump motors recovered by the diver were found, when dried out, to have suffered very little damage.

* * *

THE tendency among refiners nowadays is to make one grade of gasoline and only one. This is contrary to the practice of a few years ago when many refiners made two or even three grades of gasoline right along. In most refineries, various cuts are taken off the bubble towers and blended together, usually the cracked gasoline being blended with the rest, to make one standard grade of motor fuel. And this grade is usually considerably better than U. S. Motor specification gasoline.

I think it was a Bureau of Mines bulletin in which it was recently stated that the average end point of gasoline offered the public is about 410 degrees F. instead of the 437 allowed by the U. S. Motor specifications. Some refiners, at least, figure that in concentrating their efforts on one grade of gasoline they are able to simplify their operations and usually reduce their operating costs some.

* * *

IT IS a promising sign to see on the committee on uniform oil specifications of the American Oil Burner Association, the name of H. W. Camp, veteran Mid-Continent refiner. Mr. Camp is general superintendent of the Empire Oil & Refining Co. and has had long experience in the manufacture of stove distillates as well as all other pretroleum products.

* * *

SOMETIMES it is hard for the executives that have built up a successful business, to believe that younger men in their organization are as capable as themselves to carry on their business. This is not the attitude of all, however. The other day a veteran refiner who has made a conspicuous success told me that he is purposely withdrawing more and more from active control of the refining business he heads, not because he is tired—he is still comparatively young and very active—but because he wants to give the young men a chance to show what they can do.

He said this policy has brought some surprising results in some cases.

"There is a certain young man in our company whom I had thought rather slow to take responsibility and rather distrustful of himself," said this refiner. "So I went away for several months, after giving him a certain job to carry out. When he asked my advice by letter told him to figure it out himself and not to bother me.

* * *

THE progress of science always claims its toll of lives. Five men of the Pure Oil Co. refining department were killed when a small still with which they were carrying on experimental work, exploded.

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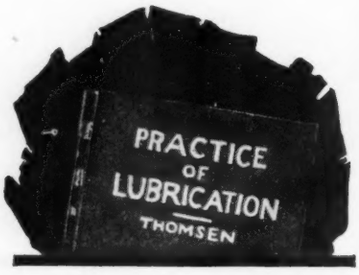

How to select, how to apply, and how to use lubricants is thoroly discussed in "Practice of Lubrication," by T. C. Thomsen, consulting engineer.

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A Method to Determine Hydrogen Sulfide In Petroleum Distillates

By Rudolf Lind*

IN THE refining of petroleum it is frequently necessary to remove hydrogen sulfide from petroleum products. Washing with water will remove it to a large extent as it is more soluble in water than in petroleum fractions. Analysis of water and pressure distillate both present in the separator tank of a Dubbs cracking plant under a pressure of approximately 25 pounds per square inch showed that the water contained 25 times as much hydrogen sulfide as the pressure distillate.

Removing hydrogen sulfide from gas by treatment with sodium carbonate solution according to the equation:

$$Na_2CO_3 + H_2S = NaHS + NaHCO_3$$

is a well established process. The carbonate solution may be revivified either by blowing out the hydrogen sulfide with air (Koppers) or by oxidizing the hydrogen sulfide to free sulfur by blowing air through the solution in presence of a catalyst, for instance nickel sulfide (L. Rosenstein and Pacific Gas & Electric Co.'s patent).

However, if pressure distillate is treated with soda ash solution, the reactivation of the solution is more difficult on account of other components present in the soda solution originating from the pressure distillate.

The usual way to remove hydrogen sulfide from pressure distillate or gasoline is by treatment with caustic soda solution.

It is the task of the analytical chemist in the refinery to determine how much caustic soda should be used for treating a certain amount of oil or how long a given charge of caustic soda should be used to keep the treating cost as low as possible and still obtain an oil free from hydrogen sulfide.

If the reaction between caustic soda and hydrogen sulfide

$$NaOH + H_2S = NaHS + H_2O$$

would go to completion one mol of sodium hydroxide would be required to react with one mol of hydrogen sulfide.

Under practical plant conditions it is usually not possible to use the amount of caustic soda required by the above equation and as a result a certain excess of caustic soda has to be used in order to obtain the treated product free from hydrogen sulfide. This excess probably varies with the special treating conditions (for example the thoroughness of mixing and the time of contact of the caustic soda solution with the treated product).

If the use of 1.15 or 1.20 mols of caustic soda per mol of hydrogen sulfide is sufficient to obtain a product free from hydrogen sulfide the treating conditions may be considered satisfactory. In order to determine the ratio of mols caustic soda per mol of hydrogen sulfide in the caustic soda solution the total alkalinity and the hydrogen sulfide content has to be determined.

This paper describes a fast and reliable method for the determination of caustic soda solution which has been used for treating pressure distillate. In this case the caustic soda solution takes up from the pressure distillate components which react with iodine; consequently a hydrogen sulfide determination by direct titration with iodine solution is inaccurate.

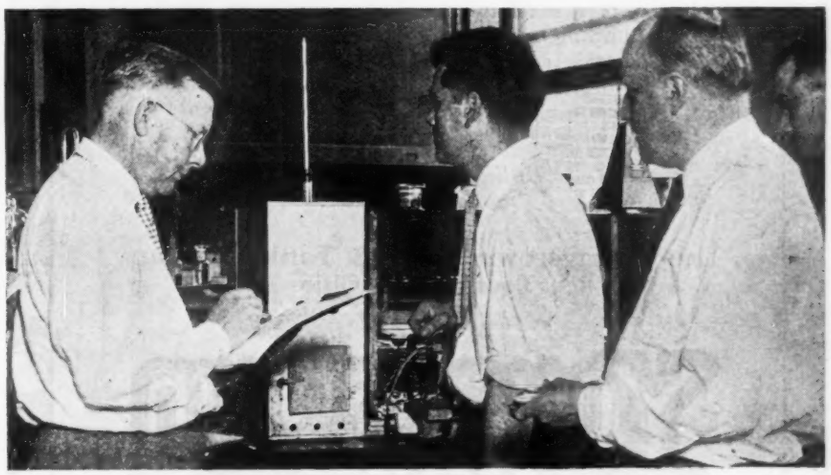
Principle of Method

A CERTAIN amount of the caustic soda solution containing sodium sulfide is titrated with standard hydrochloric acid, using methyl orange as indicator. Thus the alkalinity (total) due to sodium hydroxide and sodium sulfide is determined. In an equal amount of the original solution the sodium sulfide is oxidized to sodium sulfate (neutral) by means of hydrogen peroxide and the resulting solution is titrated with hydrochloric acid, again using methyl orange as indicator. Thus the alkalinity (free) due to the sodium hydroxide is found.

From the difference in the number of cubic centimeters used for total and free alkalinity, the amount of sulfide present is calculated. It is evident that the presence of sodium carbonate in the caustic solution does not interfere with the determination because it is determined in both titrations as sodium hydroxide and the hydrogen sulfide content is calculated from the difference.

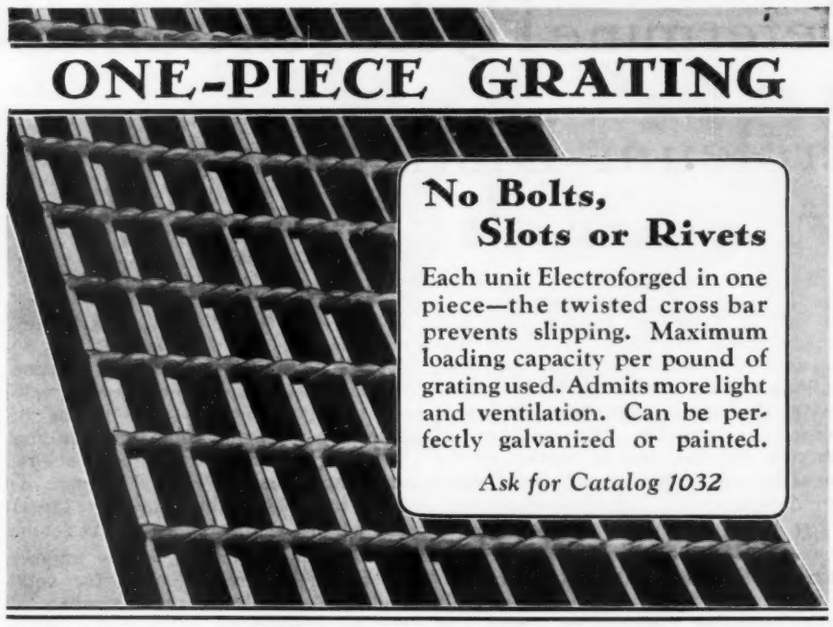
1cc. n/1 HCl is equivalent to 0.01704 gm. H_2S

If more hydrogen sulfide is present in the caustic soda solution than one molecule of the former for each two molecules of the latter, the caustic soda reacts acid after oxidation with hydrogen peroxide and the method must be slightly modified. In this modified method a measured amount of the caustic soda solution, for instance 50 cubic centimeters, are transferred with a pipette into a 100 cubic centimeters volumetric flask and the volume of the liquid is made up with caustic soda solution of con-



Members of National Petroleum Association on their annual pilgrimage to the Bureau of Standards at Washington to study testing methods for oils. Left to right, H. M. Lyons, Crew Levick Co., H. T. Kennedy, Bureau of Standards and Fayette B. Dow, general counsel of the National Petroleum Association. Photo, Underwood & Underwood

*Research Chemist, the Selig Co., Atlanta, Ga., formerly with Roxana Petroleum Corp., Wood River.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venient strength, for instance 15 or 20 degrees Be. gravity, to exactly 100 cubic centimeters.

In this mixture the total alkalinity and alkalinity after oxidation (free) is determined as above and from the difference in the number cc. of hydrochloric acid used for the two titrations the hydrogen sulfide content is calculated on the basis of the original caustic soda solution.

Example

Ten cubic centimeters of the caustic soda solution are oxidized by boiling it with neutral hydrogen peroxide in a 250 cubic centimeters Erlenmeyer flask which has a small glass funnel inserted in its neck in order to prevent losses. The hydrogen peroxide may be added in portions of 10 cubic centimeters and the oxidation is complete when the oxygen liberated from the hydrogen peroxide is not consumed any more by the reaction but boils off in very fine bubbles.

A drop of methyl orange is added and the solution is found to be acid. Now 50 cubic centimeters of the caustic soda solution are transferred with a pipette into a 100 cubic centimeters volumetric flask and the volume is made up with approximately 15 degrees Be. caustic soda solution to 100 cubic centimeters.

10 cc. of this solution neutralized	42.28 cc.	n/2	HSl
10 cc. after oxidation "	26.84 cc.	"	"
difference	15.44 "	"	"

15.44 cc. n/2 HCl are equivalent to the sulfide present in 5 cubic centimeters of the original solution.

$$\frac{15.44 \times 0.00852 \times 100}{5} = 2.63 \text{ gms. } H_2S \text{ in 100 cc.}$$

Determination of Ratio of Mols Caustic Soda Present Per Mol of Hydrogen Sulfide in Above Solution

Besides the hydrogen sulfide content the total alkali present in the original solution is determined by titration with hydrochloric acid using methyl orange as indicator. The indicator is destroyed rapidly by the liberated hydrogen sulfide and it is advisable to make a fast preliminary titration adding plenty of indicator to get an approximate idea where to expect the end point.

Then two check titrations are made, adding one or two drops of methyl orange shortly before the end point. Twenty-five cubic centimeters of the caustic solution neutralized 40.49 cubic centimeters of n/2 HCl.

$$\frac{40.49 \times 0.02001 \times 100}{25} = 3.24 \text{ gms. NaOH in 100 cc.}$$

$3.24 \div 40.01 = 0.0810$ mol NaOH
$2.63 \div 34.08 = 0.0772$ mol H_2S
$0.0810 \div 0.0772 = 1.05$ mols NaOH per mol H_2S

Determining the mol ratio of

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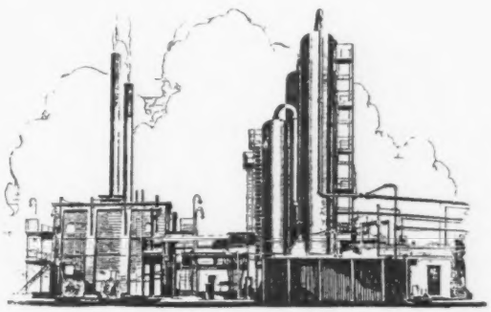

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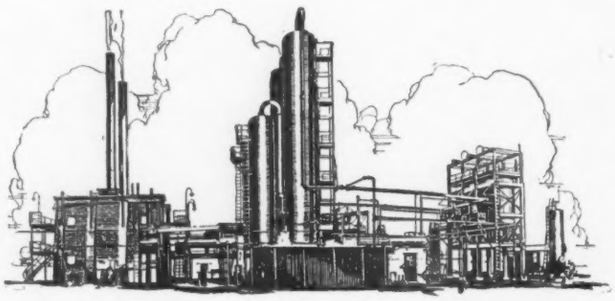

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caustic soda to hydrogen sulfide furnishes a convenient means for checking treating operation. It has been found for instance that 1.15 mols caustic soda are sufficient under normal conditions to obtain a pressure distillate free from hydrogen sulfide. If a pressure distillate sample shows presence of hydrogen sulfide while in the caustic soda used for treating the tested pressure distillate the mol ratio of sodium hydroxide to hydrogen sulfide is above 1.15, then it may be assumed that an error has been made in the treating operation. If the ratio is lower than 1.15 an insufficient amount of caustic soda has been used.

Qualitative Test for Hydrogen Sulfide in Petroleum Products

A SENSITIVE test for hydrogen sulfide in mineral oil may be made in the following way:

100 cubic centimeters of the sample are placed in a 100 cubic centimeters Engler distillation flask and air, purified by passing it through caustic soda solution, is sucked for about 10 minutes through the oil and over a moistened strip of lead acetate paper suspended in a short, wide test tube. A dark coloration indicates the presence of lead sulfide formed from the hydrogen sulfide in the oil while a yellow coloration shows presence of mercaptans.

Determination of Hydrogen Sulfide in Gas

Hydrogen sulfide in gas may be conveniently determined according to the same principle. The gas is passed through a caustic soda solution and the hydrogen sulfide is absorbed. The hydrogen sulfide in the caustic soda is determined as described above. This method is particularly applicable for H_2S determination in gas rich in hydrogen sulfide.

Procedure

Approximately 180 cubic centimeters of caustic soda (about 5 degrees Be.) are charged into a Milligan gas absorbing bottle as listed under 7-500 in the catalogue of Fisher Scientific Co., Pittsburgh. This type of absorption bottle is very well suited for the purposes of the determination.

Subsequently a measured amount of the gas is passed through the caustic soda solution and then through a 5 per cent lead acetate solution, the latter being contained in a small Erlenmeyer flask. If a black coloration or precipitate is noticed in the lead acetate solution the hydrogen sulfide evidently is not entirely absorbed by the soda solution.

This phenomenon may be due either to the fact that the gas is being passed through the soda solution too fast or that the soda solution is saturated with hydrogen sulfide. The caustic soda solution is now transferred into a 250-cubic centimeter volumetric flask and the volume is

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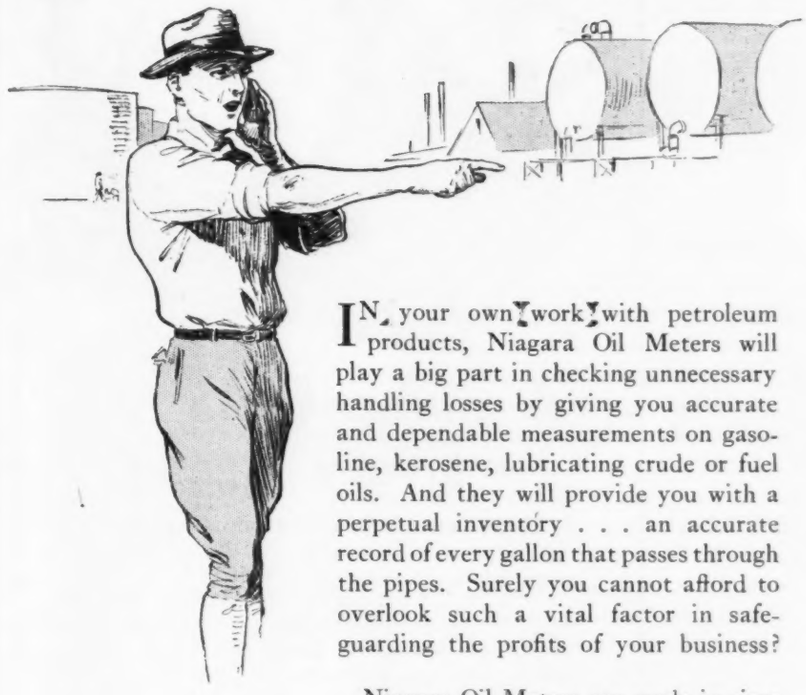

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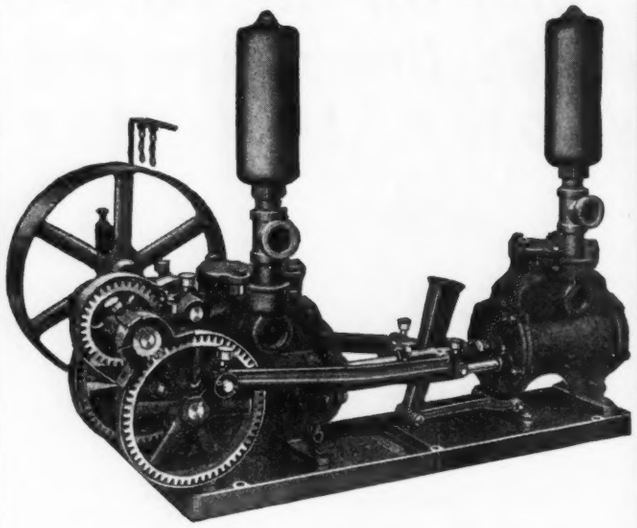

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made up to the mark with wash water from the absorbing bottle.

Twenty-five cubic centimeters of the solution from the volumetric flask are titrated with n/2 hydrochloric acid, using methyl orange as indicator. Another 25 cubic centimeters are oxidized by boiling with neutral hydrogen peroxide and also titrated with n/2 HCl using the same indicator. From the difference in the number of cubic centimeters used for the first and second titration the hydrogen sulfide content is calculated.

Example

One and 86 hundredths cubic feet of gas (corrected for a temperature of 60 degrees F. and a pressure of 760 millimeters) were passed through caustic soda solution and this solution transferred to a 250-cubic centimeter volumetric flask.

25 cc. of this solution neutralized	33.58	cc.	n/2	HCl
25 cc. after oxidation "	18.25	"	"	"
difference	15.33	"	"	"

$$\frac{15.33 \times 0.00852 \times 10}{1.86} = 0.70 \text{ gm. } H_2S \text{ per cu. ft. of gas}$$

Comments

THE proportion between sulfide and alkali present in the caustic soda solution should be such that a reasonable difference is obtained in the amount of standard hydrochloric acid used for titration of total and free alkalinity (without and with oxidation). If the sulfide (calculated as per cent H_2S) in the caustic soda solution is one-fourth of the total alkali (calculated as per cent NaOH), then approximately twice as much hydrochloric acid will be used for total alkalinity as for free alkalinity.

The proportion between sulfide content and total NaOH present can apparently be adjusted in three manners: by altering the amount of gas passed through the solution, by varying the concentration of the caustic soda solution and by changing the volume of the caustic soda solution used in the absorption bottle.

If the concentration of the caustic soda used for absorption is below 3 per cent, the oxidation of sodium sulfide to sodium sulfate is difficult and it is advisable not to use a weaker caustic soda solution. The difference in number of cubic centimeters of hydrochloric acid used in the two titrations should not be very small because the calculation of the H_2S content is based on this figure.

In what way mercaptans, absorbed by the caustic soda solution, are affected by oxidation with hydrogen peroxide we do not know at present. They might possibly be oxidized to alkyl sulfonic acids, the sodium salts of which react alkaline with methyl orange. If this is the case then mercaptans would not affect the hydrogen sulfide determination according to the above method.

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New Patents

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REFINING

Process of Producing High-Viscous Lubricating Oil and High-Grade Asphalt From Petroleum—Arthur E. Pew Jr., Bryn Mawr, Pa., assignor to Sun Oil Company, Philadelphia, Pa. Filed Dec. 22, 1926. No. 1,675,462.

Art of Cracking Hydrocarbons—Edward W. Isom, Winnetka, Ill., and Charles L. Parmelee, Orange, N. J., assignors to Sinclair Refining Company, Chicago, Ill. Filed March 3, 1923. No. 1,675,558.

Method for Cracking Oils—Charles L. Parmelee, Orange, N. J., and Edward W. Isom, Winnetka, Ill., assignors to Sinclair Refining Company, Chicago, Ill. Filed Aug. 13, 1923. No. 1,675,575.

Circulatory Cracking Still and Pump Therefor—Edward W. Isom, Winnetka, Ill., and John E. Bell, Brooklyn, N. Y., assignors to Sinclair Refining Company, Chicago, Ill. Filed May 12, 1921. No. 1,676,202.

Operation of Pressure Stills—Edward W. Isom, Winnetka, Ill., and John E. Bell, Brooklyn, N. Y., assignors to Sinclair Refining Company, Chicago, Ill. Filed April 19, 1924. No. 1,676,-203.

Oil Still—Edward W. Isom, Searsdale, N. Y., and Arnold Charles Vobach, Whiting, Ind., assignors to Sinclair Refining Company, Chicago, Ill. Filed Feb. 12, 1927. No. 1,676,204.

Cracking Oils—George L. Prichard, Port Arthur, Tex., assignor to Gulf Refining Company, Pittsburgh, Pa. Filed June 22, 1915. No. 1,676,207.

Process of Treating Oils—Henry C. Kirk, Baltimore, Md. Filed Dec. 8, 1927. No. 1,676,230.

PRODUCTION

Hydraulic Underreamer—Benjamin F. Blanchard, Fullerton, Calif. Filed Jan. 28, 1926. No. 1,675,325.

Oil-Well Derrick—Arlan L. Bowers, Bristow, Okla., assignor to Frank M. Mahan, Pawhuska, Okla.; Earnest McCarty, Wynona, Okla.; and Carl H. Besse, Burbank, Okla. Filed July 5, 1923. No. 1,675,635.

Sucker-Rod Wrench—Thomas A. Reynolds, Los Angeles, Calif. Filed March 16, 1927. No. 1,675,729.

Apparatus for the Treatment of Crude Oil—Joseph C. Umbarger, Cedar Grove, La. Filed Jan. 18, 1927. No. 1,675,775.

Safety Hook—Joseph E. Sprain, Smackover, Ark., assignor to Vickers Machine Works, Smackover, Ark. Filed July 21, 1927. No. 1,676,167.

Packing for Oil Wells—Charles Starysky, Marysville, Tex. Filed Jan. 13, 1927. No. 1,676,168.

NATURAL GAS

Liquefaction Apparatus—Richard C. Tolman, Washington, D. C.; William L. De Baufre, Lincoln, Nebr.; John W. Davis, Washington, D. C.; and Montague H. Roberts, Englewood, N. J., assignors to Samuel G. Allen. Filed Sept. 16, 1922. No. 1,676,225.

Fractional Condensation of Mixed Vapors—Louis Weisberg, Grantwood, N. J., assignor to The Barrett Company, New Jersey. Filed Nov. 29, 1921. No. 1,676,232.

MISCELLANEOUS

Oil-Tank Insulation—Ray T. Kemper, Los Angeles, Calif., assignor to Johns-Manville Corporation, New York, N. Y. Filed March 6, 1925. No. 1,675,354.

Separating from Fluid Hydrocarbons Other Hydrocarbons which Precipitate at Low Temperature—Nils Olok Backlund, Stockholm, Sweden, assignor to Bergerdorfer Eisenwerk Aktiengesellschaft, Sande, near Bergedorf-Hamburg, Germany. Filed Jan. 28, 1927. No. 1,676,069.

LOS ANGELES, July 12.—Officials of the Signal Gasoline Co. announce a complete reorganization of their concern to be incorporated with a Delaware charter under the name of Signal Oil & Gas Co. The new company is to have a capitalization of $10,000,000.

At a recent meeting of the directors, a 700 per cent stock dividend was declared. For the past six years the company has been paying a dividend of 2 per cent cash a month.

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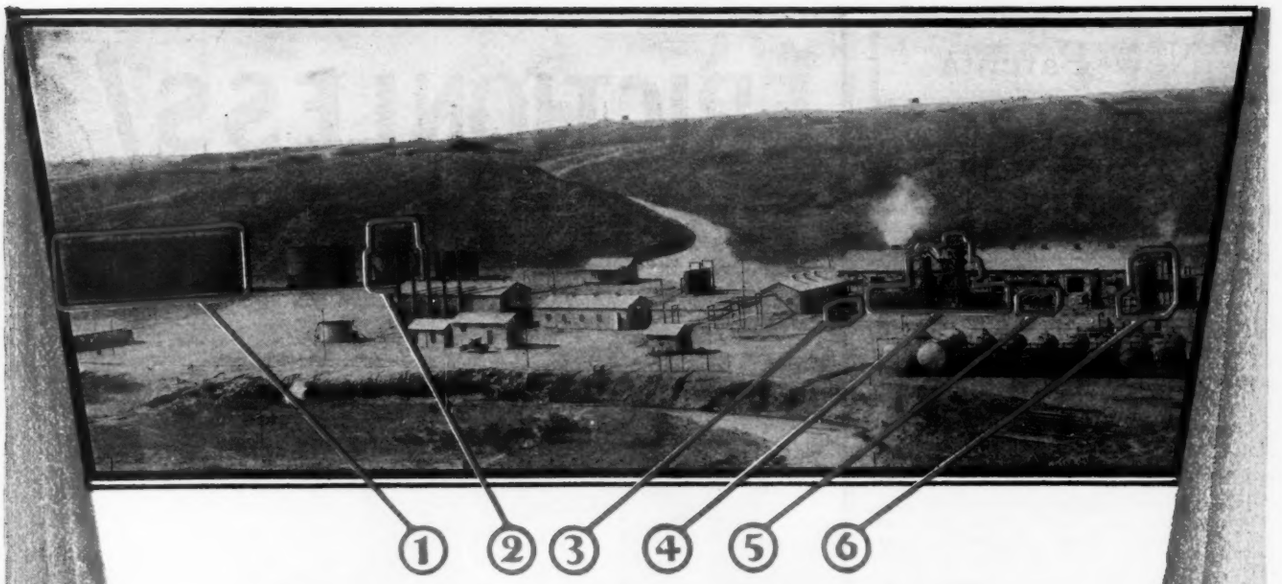

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Total Petroleum Stocks Rise in May; Demand Cuts Supply Equivalent

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, July 14

FURTHER shrinkage in the above ground supplies of crude and refined oils is noted in the Bureau of Mines petroleum statistics for May. The volume of oils rose 712,000 barrels but the actual stocks, expressed in terms of days' supply fell from 227.7 days' supply at the end of April to 221.9 days' supply at the end of May. The latter, however, was two days' supply more than was available at the end of May, 1927.

The 712,000-barrel increase in stocks of all oils brought the total to 613,386,000 barrels, the largest quantity ever held above ground in this country.

The excess of daily average new supply over daily average demand in May was the smallest in many months, only 23,000 barrels.

Additions to crude oil stocks totaled only 30,000 barrels although production in the United States and imports were larger than in April.

Stocks of gasoline were lowered 2,874,000 barrels in face of the highest average production in history, almost 994,000 barrels daily.

The largest gain in stocks of any commodity was in fuel oil.

Refinery data were collected by the bureau from 321 refineries with rated crude capacity of 3,103,000 barrels daily, which were operated at 80 per cent of capacity during May.

Crude Oil

Daily average crude oil production increased 22,100 barrels in May over April average production. The May average was 2,426,400 barrels. Production for the month totaled 75,218,000 barrels. In May, 1927, daily average production was 2,460,100 barrels.

Inland Texas production, due largely to proration agreements in west Texas, fell 32,100 barrels daily average in May from the April average. The gain in average production was due to the following increases: Arkansas 11,500 barrels; California 14,200; Illinois 2900; Oklahoma 9900; Gulf Coastal Texas 9200, and Wyoming 4900. There were smaller gains in several other states. The largest decline exclusive of inland Texas was in Kansas where production fell 3500 barrels daily average.

Oklahoma average production in May was 122,500 barrels daily less than in May, 1927. Inland Texas production was 133,100 barrels more. California production was only 5600 barrels less.

The gain in Arkansas in May was due to the new rainbow pool near Champagnolle but at 91,600 barrels daily average in May Arkansas production averaged 22,300 barrels less than production in May, 1927.

In the first five months of 1928 production totaled 362,762,000 barrels. This volume was 756,000 barrels or 0.21 per cent less than production in the first five months of 1927. Production this year was larger than last year's production in only the Appalachian and Mid-Continent fields. Appalachian production rose 289,000 barrels or 2.3 per cent to 12,435,000 barrels total for the first five months. Mid-Continent production rose 7,103,000 barrels or 3.3 per cent to 222,266,000 barrels. California production was down 3,207,000 barrels or 3.3 per cent to 93,797,000 barrels for the five months. The largest decline in both volume and percentage was in the Gulf coastal region.

The increase in stocks of crude oil, 30,000 barrels, was the smallest in

Petroleum Supply and Demand — Barrels

	May 1928	April 1928	March 1928	May 1927
Domestic Crude Production: Light	67,770,000	64,796,000	66,468,000	66,901,000
Heavy	7,448,000	7,331,000	8,569,000	9,374,000
Imports of Crude Oil	6,766,000	5,661,000	6,845,000	4,557,000
Imports of refined oil	702,000	1,680,000	1,135,000	1,329,000
Natural gasoline produced	3,474,000	3,469,000	3,426,000	3,219,000
Benzol used in blending	238,000	229,000	238,000	221,000
Total new supply of all oils	86,398,000	83,166,000	86,681,000	85,601,000
Total stocks end of preceding month	610,206,000	609,561,000	603,376,000	552,595,000
Total supply of all oils	696,604,000	692,727,000	689,485,000	638,196,000
Exports of crude oil	1,493,000	1,303,000	1,530,000	1,390,000
Exports of refined oil	13,915,000	11,813,000	11,247,000	11,863,000
Domestic demand, crude and refined	70,278,000	67,582,000	67,451,000	65,588,000
Total Demand	85,686,000	80,698,000	80,228,000	78,841,000
Total stocks of all oils end of month	613,386,000	612,674,000	610,206,000	559,386,000
Days' supply	221.9	227.7	235.7	219.9
Increase in stocks	712,000	2,468,000	6,453,000	6,791,000
Daily average new supply	2,787,000	2,772,000	2,796,000	2,761,000
Daily average demand	2,764,000	2,690,000	2,588,000	2,543,000
Daily average excess of supply	23,000	82,000	208,000	218,000
Crude stocks:				
East of California: Light	320,084,000	321,869,000	318,074,000	259,469,000
Heavy	51,467,000	49,710,000	50,670,000	47,547,000
In California: Light	19,170,000	18,752,000	19,633,000	27,143,000
Heavy	93,941,000	94,301,000	94,484,000	90,289,000
Total stocks of crude	484,662,000	484,632,000	482,861,000	424,448,000
Total stocks of refined	127,915,000	127,210,000	126,503,000	134,012,000
Stocks of natural gasoline	809,000	832,000	842,000	926,000

Crude Production—Barrels

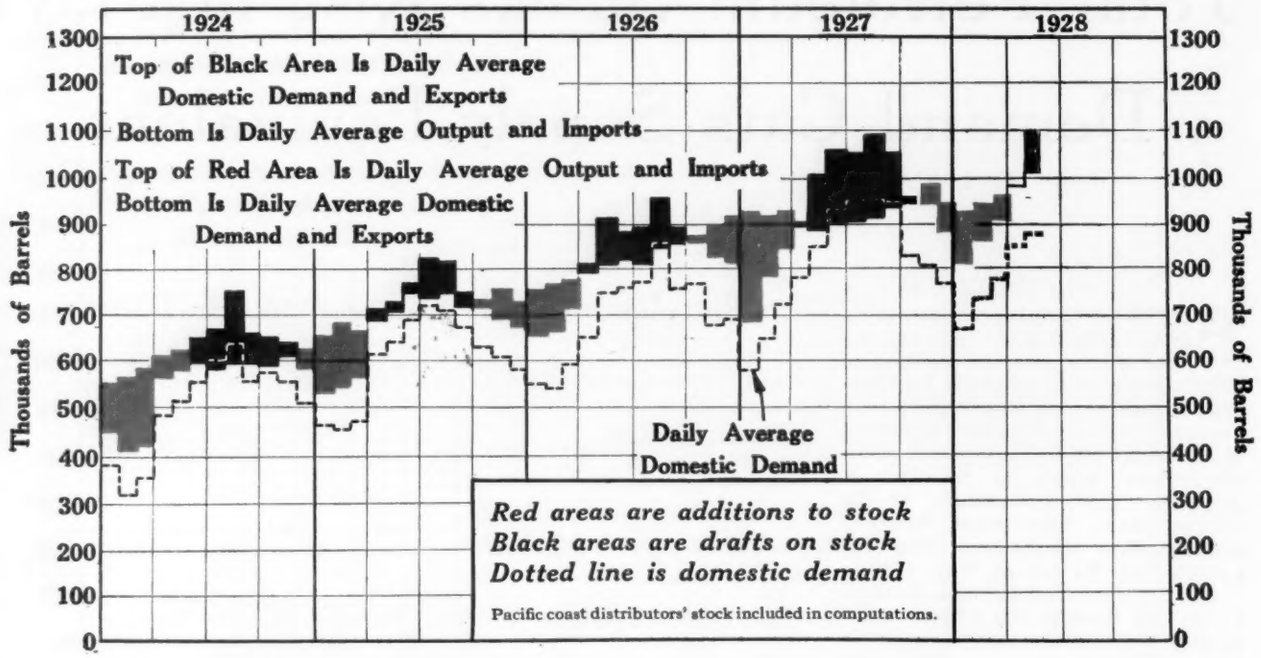
(Daily Averages)

States	May 1928	April 1928	May 1927
Arkansas	91,600	80,100	113,900
California	623,600	609,400	629,200
Colorado	7,200	7,300	7,800
Illinois	18,500	15,600	19,400
Indiana	2,900	2,800	2,300
Kansas	110,500	114,000	114,900
Kentucky	21,000	20,600	17,900
Louisiana Inland	43,100	45,000	45,900
Gulf Coast	14,900	14,000	7,400
Michigan	1,500	1,200	1,300
Montana	10,800	10,700	14,700
New Mexico	2,300	2,400	3,200
New York	6,900	6,500	6,200
Ohio	20,900	19,500	21,600
Oklahoma	634,300	624,400	756,800
Pennsylvania	28,000	26,200	26,200
Tennessee	200	100	200
Texas Inland	595,700	627,800	462,600
Gulf Coast	114,100	104,900	130,100
West Virginia	16,900	15,200	16,500
Wyoming	61,500	56,600	62,000
Total U. S.	2,426,400	2,404,300	2,460,100

Crude Oil Production by Fields — Barrels

Fields	May Daily Avg.	April Daily Avg.	Jan.-May 1928 Total	Jan.-May 1927 Total	Changes 1928 from 1927
Appalachian	88,900	83,800	12,721,000	12,435,000	+ 2.30
Lima-Indiana	5,300	4,600	702,000	783,000	—10.34
Michigan	1,500	1,200	174,000	175,000	— 0.57
Ill.-S. W. Indiana	21,100	18,100	3,074,000	3,255,000	— 5.56
Mid-Continent	1,475,200	1,491,300	222,266,000	215,163,000	+ 3.30
Gulf Coast	129,000	118,900	18,070,000	21,671,000	—16.61
Rocky Mountain	81,800	77,000	11,958,000	13,032,000	— 8.24
California	623,600	609,400	93,797,000	97,004,000	— 3.30
U. S. Total	2,426,400	2,404,300	362,762,000	363,518,000	— 0.21

Gasoline Production and Consumption



GASOLINE PRODUCTION AND CONSUMPTION

May domestic output	994,000	Bbls. daily av.	
May imports	12,000	Bbls. daily av.	
Total new supply	1,006,000	Bbls. daily av.	
May domestic shipments	882,000	Bbls. daily av.	
May exports	217,000	Bbls. daily av.	
Total indicated demand	1,099,000	Bbls. daily av.	
Stocks May 31, 1928	37,336,000	Bbls.	
Decrease in stocks in May	2,874,000	Bbls.	
Stocks May 31, 1927	48,609,000	Bbls.	

the last 18 months. It was the first time since October, 1926, that stocks of crude oil east of California were drawn on. The draft in May was 28,000 barrels. Stocks in California rose 58,000 barrels.

The largest draft was on foreign crude oil stocks at Atlantic ports not at refineries. East coast refiners increased their stocks of foreign crude 449,000 barrels. This increase was due largely to a gain in imports which rose from 5,661,000 barrels, a daily average of 188,700 barrels, in April to 6,766,000 barrels, a daily average of 218,300, in May. Origin of the foreign oil was as follows, amounts in daily average:

	May	April
Mexico	55,600	40,200
Venezuela	131,700	113,200
Colombia	27,600	26,300
Other countries	3,400	9,000
Total	218,300	188,700

Total imports in the first five months of 1928 and 1927 compare:

	1928	1927
Mexico	6,642,000	10,158,000
Venezuela	18,222,000	6,635,000
Colombia	5,484,000	3,496,000
Other countries	1,105,000	1,460,000
Total	31,453,000	21,749,000

It will be observed from the foregoing that South America is rapidly gaining as a source of crude oil. Receipts from Venezuela this year have been almost triple receipts from Mexico, and Colombia is pressing Mexico hard for second place. Imports of crude in the first five months of this year have been 44.6 per cent larger than imports in the corresponding time last year.

Exports averaged 48,200 barrels daily in May and 43,400 in April. Canada is the principal importer of United States crude oil.

Shipments of California crude oil to Atlantic and Gulf of Mexico ports averaged 162,000 barrels daily in May and 233,000 barrels in April. In the first five months California crude oil to eastern ports of the United States totaled 1,467,000 barrels, compared with 3,595,000 barrels in the corresponding months in 1927.

The Bureau of Mines shows declines in production at all but Long Beach of five important districts.

Crude Oil Stocks — By Months

(Thousands of Barrels)

1927	East of Calif.	†In Calif.	Total U. S.
January	278,972	118,988	397,673
February	285,458	117,410	402,868
March	290,110	117,454	407,564
April	297,895	117,843	415,738
May	307,016	117,432	424,448
June	315,702	117,414	433,116
July	324,930	116,996	441,926
August	333,673	115,227	448,900
September	339,741	114,981	454,722
October	345,357	113,467	458,824
November	348,885	113,746	462,631
December	351,646	111,855	463,501
1928			
January	358,892	114,820	473,712
February	362,963	114,907	477,870
March	368,744	114,117	482,861
April	371,579	113,053	484,632
May	371,551	113,111	484,662

†Includes heavy fuels.

Daily Average Runs to Stills — All Oils — Barrels

	East Coast	Appala.	Ind.-Ill.	Okla.-Kans.	Texas	La.-Ark.	Rocky-Mt.	Calif.	Total U. S.	
January, 1927	408,355	82,581	206,226	278,258	517,160	228,516	103,161	616,516	2,440,774	January, 1927
February	412,714	86,928	197,785	295,964	504,642	228,107	103,321	633,108	2,462,571	February
March	439,387	83,097	209,161	283,548	479,806	224,903	103,290	597,839	2,421,032	March
April	411,367	84,400	204,067	286,067	491,567	224,400	100,500	615,333	2,417,701	April
May	413,516	82,000	226,677	293,581	494,806	212,129	75,839	618,452	2,417,000	May
June	429,967	85,400	238,067	301,733	490,633	199,933	87,300	605,733	2,438,766	June
July	439,871	80,935	250,387	317,129	482,839	199,194	87,226	633,032	2,490,613	July
August	465,839	86,065	237,194	319,516	481,032	202,226	76,032	618,516	1,486,420	August
September	453,000	87,100	225,667	327,300	483,900	211,600	71,700	637,467	2,497,733	September
October	475,580	91,161	229,677	307,774	513,419	204,968	80,871	617,937	2,521,387	October
November	471,667	84,200	246,100	298,667	515,533	197,900	89,800	619,733	2,523,600	November
December	467,226	83,484	250,516	292,355	494,806	199,226	87,354	592,710	2,467,677	December
January, 1928	450,064	84,613	247,097	288,645	482,613	202,064	85,935	570,161	2,411,193	January, 1928
February	461,448	86,680	250,793	296,482	510,586	201,518	83,207	587,690	2,478,413	February
March	455,807	88,548	268,000	304,032	523,548	203,839	89,064	593,968	2,526,806	March
April	499,866	92,933	272,900	319,200	533,967	218,233	93,433	599,300	2,629,833	April
May	502,613	98,322	296,290	331,903	540,613	237,290	101,774	584,032	2,692,839	May

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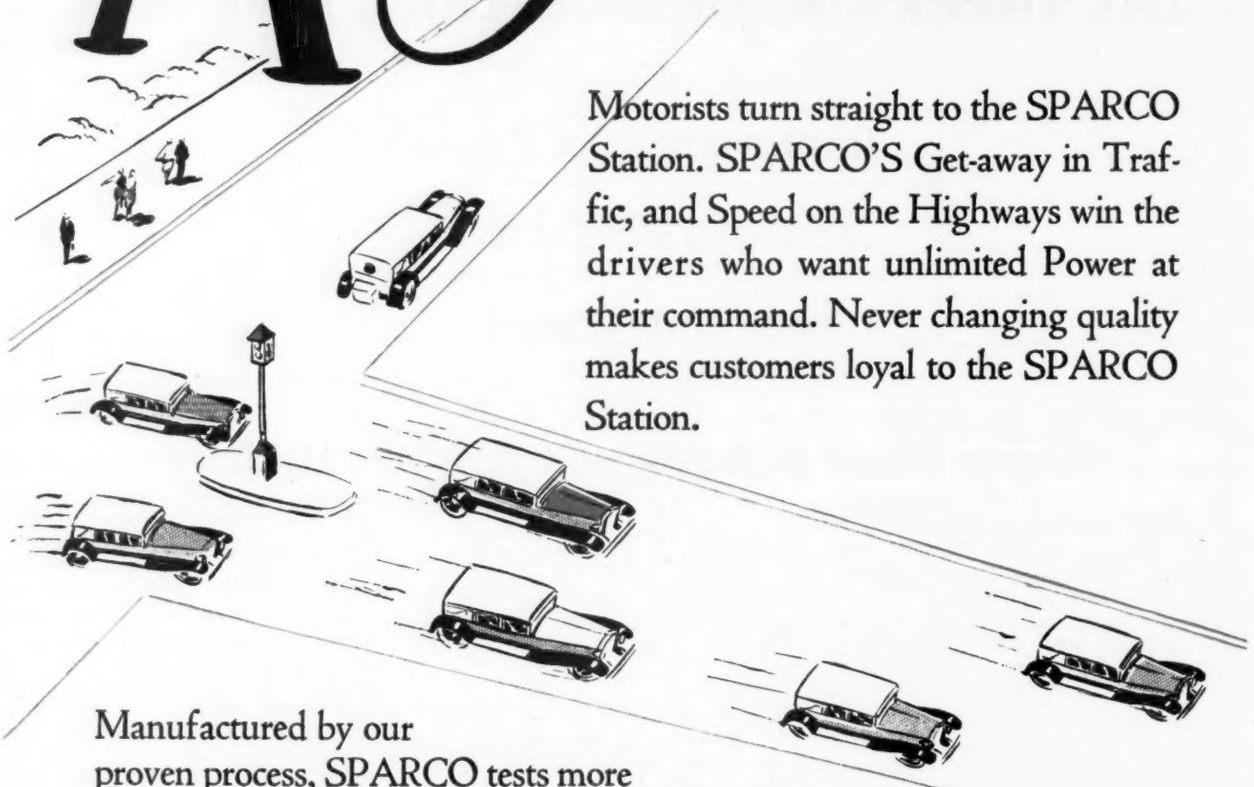

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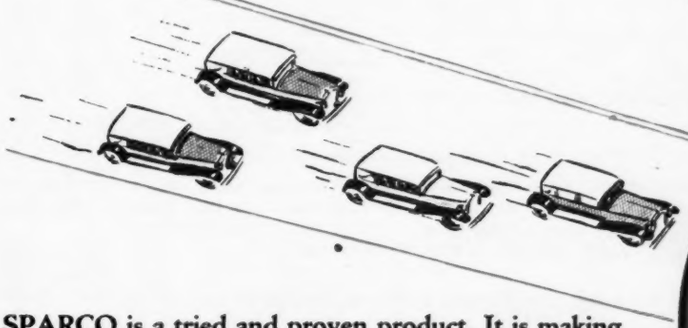
SPARCO Dealers have the essential fuel for high compression motors, the better fuel for any motor. SPARCO is manufactured only from Smackover Heavy Crude, with strictest attention to temperatures and pressures. SPARCO answers new driving conditions with slow, even burning, giving the pistons a constantly sustained force. 4,000 carloads of SPARCO have been shipped in the last year. Every gallon made customer-friends for the progressive, aggressive dealers selling SPARCO.



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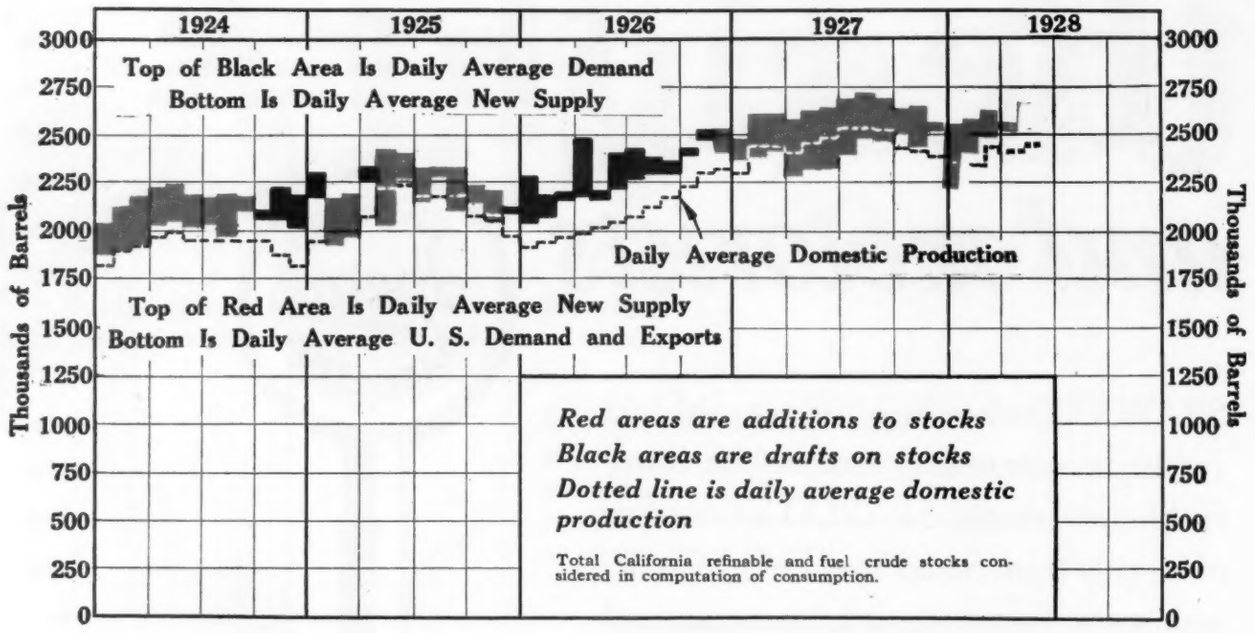
Crude Oil Production and Demand



CRUDE OIL PRODUCTION AND DEMAND

May domestic production	2,426,400	Bbls. daily av.
May imports	218,300	Bbls. daily av.
Total new supply in May	2,644,700	Bbls. daily av.
May indicated demand east of California	1,973,800	Bbls. daily av.
May indicated California deliveries	621,700	Bbls. daily av.
May exports	48,200	Bbls. daily av.
Total indicated demand in May	2,643,700	Bbls. daily av.

Stocks in pipe lines and at tank farms east of California, May 31, 1928	328,149,000	Bbls.
Stocks at refineries east of California	43,293,000	Bbls.
Stocks of foreign crude not at refineries	109,000	Bbls.
California stocks 20° A. P. I. and lighter	19,170,000	Bbls.
California stocks heavier than 20°	93,941,000	Bbls.
Total stocks May 31, 1928	484,662,000	Bbls.
Increase in stocks in May	30,000	Bbls.
Stocks May 31, 1927	424,448,000	Bbls.

Daily average production in barrels in these fields compare:

	May	April
Seminole	290,000	299,000
Panhandle	66,000	71,000
West Texas	351,000	382,000
Seal Beach	36,000	39,000
Long Beach	181,000	154,000

The average initial production of new wells in those five fields in May were: Seminole 1700 barrels; Panhandle 100; West Texas 5300; Seal Beach 100, and Long Beach 1700.

Runs to Stills

Daily average charges to stills of all oils in May was 2,692,839 barrels, the largest volume in the history of the industry. New high rates of charges were established in all refining districts except the Rocky Mountain and California district.

Average charges for all districts totaled 63,006 barrels or 2.3 per cent more than April charges. Compared with charges in May, 1927, the charges were 275,839 barrels or 11.4 per cent more.

The total charge of 83,478,000 barrels in May consisted of 70,697,000 barrels of domestic crude oil, 6,614,000 barrels of foreign crude oil, 3,314,000 barrels of unfinished oils, and 2,853,000 barrels of natural gasoline.

Gasoline

Gasoline production was increased only 1.7 per cent in May over April output but shipments from refineries were 11.11 per cent larger. The

Gasoline Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	27,960,000	520,000	3,557,000	17,888,000	46,058,000
February	25,024,000	416,000	3,544,000	18,240,000	49,714,000
March	27,886,000	493,000	3,219,000	22,646,000	52,410,000
April	26,577,000	377,000	3,614,000	23,371,000	52,379,000
May	26,787,000	490,000	4,468,000	26,579,000	48,609,000
Total Five Months	134,234,000	2,296,000	18,402,000	108,724,000	48,609,000
June	26,616,000	590,000	4,248,000	27,799,000	43,768,000
July	28,118,000	190,000	3,223,000	29,784,000	39,069,000
August	28,010,000	348,000	4,193,000	29,779,000	33,455,000
September	27,716,000	515,000	3,539,000	28,409,000	29,738,000
October	28,903,000	365,000	3,959,000	25,497,000	29,550,000
November	28,558,000	417,000	3,724,000	24,400,000	30,401,000
December	28,512,000	282,000	3,154,000	23,718,000	32,323,000
1927 Total	330,667,000	5,003,000	44,442,000	297,928,000	
January, 1928	27,879,000	562,000	3,713,000	20,939,000	36,112,000
February	26,775,000	372,000	3,341,000	21,136,000	38,782,000
March	29,245,000	259,000	4,016,000	24,041,000	40,229,000
April	29,332,000	472,000	4,111,000	25,712,000	40,210,000
May	30,825,000	368,000	6,712,000	27,355,000	37,336,000
Total Five Months	144,056,000	2,033,000	21,893,000	119,183,000	37,336,000

Stocks of Crude Oil—

Domestic Unless Otherwise Specified. Amounts in Thousands of Barrels

AT REFINERIES

Districts	May 1928	April 1928	May 1927
East Coast:			
Domestic	7,778	7,897	7,754
Foreign	6,020	5,571	3,043
Appalachian	2,266	2,166	1,662
Indiana, Illinois, etc.	3,097	3,148	2,465
Oklahoma, Kansas, etc.	6,193	5,889	4,301
Texas Inland	1,790	1,558	1,196
Texas Gulf Coast:			
Domestic	8,110	8,132	8,307
Foreign	111	243	304
Ark. and Inland La.	797	684	420
Louisiana Gulf Coast:			
Domestic	4,722	5,343	4,793
Foreign	979	1,053	1,072
Rocky Mountain	1,430	1,541	1,181
U. S. East of Calif.	43,293	43,225	36,498
At Tank Farms, In Pipe Lines and Elsewhere Than Refineries			
Appalachian	5,978	5,955	6,692
Kentucky	1,200	1,208	1,288
Lima-Indiana	1,234	1,196	771
Ill., S. W. Indiana	12,273	12,217	11,729
Okla., Kans., Tex., except coastal	237,368	237,477	176,827
N. La.-Ark.	26,370	26,201	27,752
Gulf Coast	16,596	16,630	18,073
Rocky Mountain	27,130	27,293	27,100
East of Calif. pipe line tank farm stocks	328,149	328,177	270,232
Foreign Crude:			
Atlantic Ports	58	123	80
Gulf Ports	51	54	206
Total refinery, pipe line and tank farm stocks east of Calif.	371,551	371,579	307,016
California:			
20° and lighter	19,170	18,752	27,143
Heavier than 20°	93,941	94,301	90,289
Grand Total	113,111	113,053	117,432

CLASSIFICATION BY GRAVITY

Elsewhere than at refineries east of California			
24° and lighter	320,084	321,869	259,469
Heavier than 24°	51,467	49,710	47,547

"I call that Service"!

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HE drove up and demanded "Five", in none too pleasant a way. The operator quickly slipped the nozzle into his tank, turned the little crank and in a few seconds the gasoline in the ten gallon glass cylinder fell from figure "0" at the top to exactly "5" on the indicator.

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"All right, let's have it—but make it snappy."

Almost before the words were spoken, the operator had turned the crank again, and the gasoline fell to "8" on the indicator.

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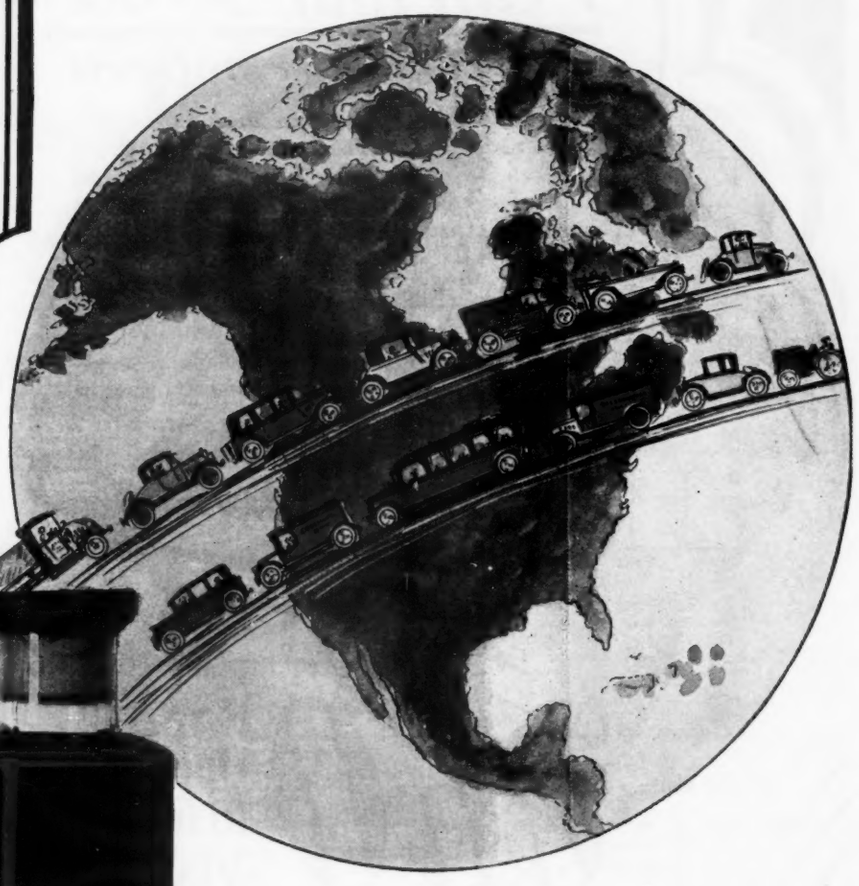

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Gravity	23-25
Flash	440-450
Fire	500-510
Vis. @ 210	80-90
Pour Test	20 Maximum
Color	7 NPA

915	
Gravity	23-25
Flash	490-500
Fire	565-575
Vis. @ 210	120-130
Pour Test	20 Maximum
Color	8 NPA

TEXAS PACIFIC COAL AND OIL COMPANY
FORT WORTH, TEXAS

Gasoline Situation by Districts — Barrels

Districts	May Daily Avg. Output	April Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1928	Stocks April 1928	Stocks May 1927	Districts
East Coast	139,322	137,432	+ 1.37	156,387	146,100	+ 7.04	6,312,000	6,841,000	10,233,000	East Coast
Appalachian	43,839	42,333	+ 3.56	48,129	44,400	+ 8.40	1,157,000	1,290,000	1,040,000	Appalachian
Ind., Ill., etc.	146,710	135,000	+ 8.67	162,097	138,667	+16.90	5,030,000	5,507,000	5,294,000	Ind., Ill., etc.
Okla., Kans., etc.	164,419	160,100	+ 2.70	188,839	155,500	+21.44	3,441,000	4,198,000	4,292,000	Okla., Kans., etc.
Texas	208,129	219,300	— 5.09	206,903	210,633	— 1.77	5,946,000	5,908,000	6,822,000	Texas
La. and Ark.	73,839	72,200	+ 2.27	82,613	73,367	+12.60	1,418,000	1,690,000	3,438,000	La. and Ark.
Rocky Mountain	48,903	44,900	+ 8.91	53,451	42,067	+27.06	2,058,000	2,199,000	4,855,000	Rocky Mountain
California	169,193	166,467	+ 1.64	188,645	167,633	+12.53	11,974,000	12,577,000	12,635,000	California
U. S. Total	994,354	977,732	+ 1.70	1,087,064	978,367	+11.11	37,336,000	40,210,000	48,609,000	U. S. Total
Texas Gulf Coast	160,064	173,100	— 7.53	156,742	160,733	+ 2.48	5,216,000	5,113,000	5,687,000	Texas Gulf Coast
La. Gulf Coast	54,774	54,800	— 0.05	63,032	55,933	+12.69	1,327,000	1,583,000	3,318,000	La. Gulf Coast

Natural Gasoline and Motor Blends — Barrels

Districts	Daily Avg. Production May (net)	Daily Avg. Production Apr. (net)	Stocks End of May	Stocks End of April	Motor Fuel Blends Made in May	Motor Fuel Blends Made in Apr.	Stocks of Blends End of May	Stocks of Blends End of Apr.	Districts
Appalachian	5,683	7,380	98,166	119,500	8,571	8,381	6,762	6,095	Appalachian
Ind., Ill., etc.	922	1,032	11,262	13,095	1,571	1,333	357	405	Ind., Ill., etc.
Okla., Kans., etc.	40,630	42,698	414,048	404,928	113,095	114,643	15,833	18,309	Okla., Kans., etc.
Texas	21,044	21,746	198,762	197,619	18,381	18,619	3,738	3,595	Texas
Louisiana & Ark.	5,914	5,714	37,428	36,309	12,452	11,666	1,167	286	Louisiana & Ark.
Rocky Mountain	3,149	2,936	14,833	14,452	.....	.....	2,000	2,000	Rocky Mountain
Total east of Calif.	77,342	81,506	774,499	785,903	154,070	154,642	29,857	30,690	Total east of Calif.
California	34,715	34,126	34,190	46,000	Not avail.	Not avail.	24	47	California
U. S. Total	112,057	115,632	808,689	831,903	.....	.....	29,881	30,737	U. S. Total

gain in shipments resulted in a draft of 2,874,000 barrels on gasoline stocks. Imports of gasoline were smaller than April imports and exports were 63.2 per cent larger than April imports.

Stocks of gasoline at the end of May this year represented 34 days' supply at the May rate of foreign and domestic demand. Stocks a year before were 48.5 days' supply at the rat of demand then current.

Output of gasoline in May was less than April output only in Texas. May shipments were larger than April shipments in all districts but Texas. The decline in Texas shipments was solely at inland plants. Gulf coastal plants increased shipments 2.48 per cent. However, stocks accumulated at Gulf Coastal Texas refineries and fell at the inland plants. Only Appalachian refineries held more gasoline May 31 than was held a year earlier.

Gasoline statistics for the first five months of 1928 compared with those for the first five months of 1927 show these differences:

1. Output in 1928 was 9,822,000 barrels or 7.3 per cent more.

2. Imports in 1928 were 263,000 barrels or 11.4 per cent less.

3. Total new supply was 9,559,000 barrels or 7 per cent more.

4. Domestic demand in 1928 was

Kerosene Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	5,113,000	.....	1,616,000	3,882,000	8,190,000
February	4,453,000	1,000	1,399,000	2,590,000	8,655,000
March	4,802,000	3,000	1,351,000	3,356,000	8,753,000
April	4,608,000	1,000	1 861,000	2,776,000	8,725,000
May	4,663,000	1,000	1,633,000	3,188,000	8,568,000
Total Five Months	23,639,000	6,000	7,860,000	15,792,000	8,568,000
June	4,308,000	2,000	1,616,000	2,695,000	8,567,000
July	4,484,000	.....	1,376,000	2,637,000	9,038,000
August	4,420,000	4,000	1,700,000	3,389,000	8,373,000
September	4,686,000	.....	1,659,000	3,280,000	8,120,000
October	4,884,000	1,000	2,211,000	3,469,000	7,325,000
November	4,824,000	27,000	1,821,000	2,514,000	7,841,000
December	4,869,000	15,000	1,237,000	3,819,000	7,669,000
1927 Total	56,114,000	55,000	19,480,000	37,595,000	.....
January, 1928	5,047,000	46,000	2,350,000	2,742,000	7,670,000
February	4,783,000	11,000	1,551,000	3,221,000	7,692,000
March	4,717,000	6,000	1,852,000	2,737,000	7,826,000
April	5,033,000	20,000	1,912,000	3,234,000	7,733,000
May	5,243,000	1,000	2,057,000	3,383,000	7,537,000
Total Five Months	24,823,000	84,900	9,722,000	15,317,000	7,537,000

Kerosene Situation by Districts — Barrels

Districts	May Daily Avg. Output	April Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1928	Stocks April 1928	Stocks May 1927	Districts
East Coast	24,935	26,433	— 5.66	21,064	29,600	—28.84	1,617,000	1,497,000	1,337,000	East Coast
Appalachian	10,193	10,067	+ 1.25	11,000	10,600	+ 3.77	244,000	269,000	286,000	Appalachian
Ind., Ill., etc.	19,161	16,000	+19.75	20,387	18,167	+12.22	773,000	811,000	694,000	Ind., Ill., etc.
Okla., Kans., etc.	29,742	30,533	— 2.59	29,774	31,833	— 6.47	485,000	486,000	509,000	Okla., Kans., etc.
Texas	36,903	35,433	+ 4.15	49,613	30,667	+61.78	1,242,000	1,636,000	1,781,000	Texas
La. and Ark.	16,580	15,966	+ 3.85	7,935	12,133	—34.60	1,495,000	1,227,000	1,706,000	La. and Ark.
Rocky Mountain	5,839	5,166	+13.03	7,387	5,800	+27.36	247,000	295,000	325,000	Rocky Mountain
California	25,774	28,167	— 8.49	28,290	32,067	—11.78	1,434,000	1,512,000	1,930,000	California
U. S. Total	169,127	167,765	+ 0.81	175,450	170,867	+ 2.68	7,537,000	7,733,000	8,568,000	U. S. Total
Texas Gulf Coast	29,871	28,167	+ 6.05	42,484	23,033	+84.45	1,162,000	1,553,000	1,375,000	Texas Gulf Coast
La. Gulf Coast	14,710	14,267	+ 3.10	6,516	10,433	—37.54	1,468,000	1,214,000	1,672,000	La. Gulf Coast

Lubricants Situation by Districts — Barrels

Districts	May Daily Avg. Output	April Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1928	Stocks April 1928	Stocks May 1927	Districts
East Coast	29,033	33,367	—12.99	29,484	39,267	—24.91	2,852,000	2,866,000	2,822,000	East Coast
Appalachian	14,742	14,200	+ 3.82	14,516	13,533	+ 7.26	1,093,000	1,086,000	996,000	Appalachian
Ind., Ill., etc.	12,355	10,900	+13.35	13,194	13,333	— 1.04	815,000	841,000	681,000	Ind., Ill., etc.
Okla., Kans., etc.	7,742	8,067	— 4.03	7,710	8,800	—12.39	544,000	543,000	468,000	Okla., Kans., etc.
Texas	25,484	22,267	+14.45	23,355	24,967	— 6.45	1,728,000	1,662,000	1,902,000	Texas
La. and Ark.	2,193	2,533	—13.42	1,871	2,667	—29.84	125,000	115,000	117,000	La. and Ark.
Rocky Mountain	1,742	1,633	+ 6.67	1,710	1,933	—11.54	131,000	130,000	126,000	Rocky Mountain
California	6,419	7,900	—18.75	6,516	9,500	—31.41	772,000	775,000	899,000	California
U. S. Total	99,710	100,867	— 1.15	98,356	114,000	—13.72	8,060,000	8,018,000	8,011,000	U. S. Total
Texas Gulf Coast	24,419	21,167	+15.36	22,451	24,133	— 6.97	1,647,000	1,586,000	1,869,000	Texas Gulf Coast
La. Gulf Coast	2,129	2,467	—13.70	1,806	2,667	+32.28	123,000	113,000	117,000	La. Gulf Coast

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)	
January, 1927	92,914	287,394	191,180	215,337	511,000	1,189,000	2,473,000	39,287,000	2,367,000	January, 1927
February	88,102	294,682	172,685	234,450	546,000	1,282,000	2,729,000	38,986,000	2,091,000	February
March	98,163	325,521	222,309	235,251	525,000	1,356,000	2,412,000	39,392,000	2,369,000	March
April	88,404	318,529	273,767	219,502	561,000	1,410,000	1,978,000	38,095,000	2,237,000	April
May	87,900	329,400	319,000	222,500	599,000	1,368,000	1,809,000	37,760,000	2,599,000	May
June	95,300	293,100	347,100	232,400	677,000	1,180,000	2,283,000	38,192,000	2,487,000	June
July	90,400	305,800	334,700	214,100	747,000	928,000	2,490,000	39,647,000	2,516,000	July
August	94,800	303,600	339,500	192,200	743,000	879,000	1,955,000	38,711,000	2,598,000	August
September	97,500	313,500	333,100	176,300	634,000	863,000	1,811,000	36,962,000	2,453,000	September
October	101,600	331,300	332,600	189,400	663,000	960,000	1,977,000	35,874,000	2,405,000	October
November	102,300	349,200	290,000	196,200	606,000	1,120,000	2,121,000	35,209,000	2,145,000	November
December	107,800	345,100	262,600	220,800	593,000	1,221,000	2,435,000	35,314,000	2,062,000	December
1927 Total	1,145,183	.....	3,418,541	.....	7,405,000	.....	26,473,000	.....	28,329,000	1927 Total
January, 1928	103,000	330,400	198,900	209,300	613,000	1,176,000	2,297,000	35,843,000	2,128,000	January, 1928
February	100,000	337,000	208,500	230,300	635,000	1,297,000	2,198,000	36,030,000	1,969,000	February
March	107,200	352,400	270,000	268,700	661,000	1,527,000	2,247,000	35,601,000	2,258,000	March
April	109,400	342,100	273,900	273,700	656,000	1,601,000	2,475,000	36,463,000	2,223,000	April
May	118,400	348,300	330,700	262,200	879,000	1,392,000	2,792,000	37,073,000	2,398,000	May

10,459,000 barrels or 9.6 per cent more.

5. Exports were 3,491,000 barrels or 18.9 per cent more.

6. Total demand was 13,950,000 barrels or 10.9 per cent more.

7. Stocks as of May 31, 1928, were 11,273,000 barrels or 23.2 per cent less than stocks May 31, 1927.

Of the gasoline produced in May 60 per cent was straight run, 31 per cent cracked, and 9 per cent natural gasoline. This was an increase of 1 point in proportion of straight run gasoline produced and a decrease of 1 point in use of natural gasoline.

Gasoline shipments from California to eastern United States ports totaled 1,386,000 barrels in May and 1,182,000 barrels in April. In the five months ended May 31, 1928, shipments totaled 5,700,000 barrels, compared with 4,327,000 barrels in the corresponding time a year ago.

Natural Gasoline

Average natural gasoline production was less in May than in April in every producing district except Louisiana-Arkansas and California. For the whole country the decline was 3575 barrels daily average. Stocks were lowered 23,214 barrels. The largest decline was in the Appalachian region, a draft of 21,334 barrels.

Average production of natural gasoline blends was slightly lower in May than in April. There was a small decrease in stocks to 29,881 barrels.

Kerosene

Stocks of kerosene were reduced 236,000 barrels in May. Output was a little larger than April output but export and domestic demand was larger than total demand in April. Stocks May 31 were 1,031,000 barrels less than stocks May 31, 1927.

Output was increased in five of the eight refining districts and shipments were larger in four of the districts. Stocks were lowered in all but the East Coast and Louisiana-Arkansas districts. Stocks May 31,

Lubricating Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	2,570,000	1,000	864,000	1,496,000	7,867,000
February	2,345,000	.....	620,000	1,231,000	8,361,000
March	2,754,000	1,000	895,000	2,334,000	8,035,000
April	2,615,000	1,000	763,000	1,712,000	8,176,000
May	2,625,000	1,000	863,000	1,928,000	8,011,000
Total Five Months	12,909,000	4,000	4,005,000	8,701,000	8,011,000
June	2,571,000	1,000	758,000	2,197,000	7,628,000
July	2,672,000	.....	993,000	1,811,000	7,496,000
August	2,752,000	1,000	754,000	2,004,000	7,491,000
September	2,782,000	.....	861,000	1,965,000	7,447,000
October	2,757,000	1,000	839,000	1,782,000	7,584,000
November	2,477,000	.....	798,000	1,739,000	7,524,000
December	2,801,000	.....	802,000	1,663,000	7,860,000
1927 Total	31,721,000	7,000	9,810,000	21,634,000	.....
January, 1928	2,658,000	.....	934,000	1,606,000	7,978,000
February	2,728,000	.....	841,000	1,533,000	8,332,000
March	2,905,000	.....	837,000	1,988,000	8,412,000
April	3,026,000	.....	1,059,000	2,362,000	8,018,000
May	3,091,000	.....	1,063,000	1,989,000	8,060,000
Total Five Months	14,408,000	.....	4,734,000	9,478,000	8,060,000

Gas and Fuel Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	32,936,000	660,000	3,732,000	.....	*23,195,000
February	30,185,000	1,053,000	3,812,000	.....	*22,099,000
March	32,377,000	525,000	3,657,000	.....	*22,561,000
April	31,856,000	805,000	3,325,000	.....	*23,732,000
May	33,499,000	826,000	4,544,000	.....	*26,059,000
Total Five Months	160,853,000	3,869,000	19,070,000	.....	*26,059,000
June	31,691,000	851,000	4,278,000	.....	*26,590,000
July	33,693,000	849,000	4,047,000	.....	*28,890,000
August	34,098,000	391,000	4,639,000	.....	*30,346,000
September	32,339,000	341,000	3,258,000	.....	*31,631,000
October	34,045,000	667,000	4,206,000	.....	*33,191,000
November	32,594,000	704,000	4,013,000	.....	*33,637,000
December	33,029,000	451,000	3,828,000	.....	*31,982,000
1927 Total	392,342,000	8,123,000	47,339,000	.....	.....
January, 1928	32,271,000	553,000	4,175,000	.....	*29,623,000
February	30,944,000	666,000	3,420,000	.....	*29,011,000
March	34,071,000	848,000	3,969,000	.....	*29,170,000
April	33,857,000	1,176,000	4,211,000	.....	*29,499,000
May	35,620,000	323,000	3,612,000	.....	*32,887,000
Total Five Months	131,143,000	3,566,000	19,387,000	.....	*32,887,000

*These stocks for east of California only.

Gas and Fuel Situation by Districts — Barrels

Districts	May Daily Avg. Output	April Daily Avg. Output	May Change %	May Daily Avg. Shipments	April Daily Avg. Shipments	May Change %	Stocks May 1928	Stocks April 1928	Stocks May 1927	Districts
East Coast	254,451	255,933	— 0.58	245,000	281,167	—12.86	8,950,000	8,657,000	6,866,000	East Coast
Appalachian	18,871	17,200	+ 9.71	16,322	16,833	— 3.03	1,019,000	940,000	856,000	Appalachian
Ind. Ill., etc.	89,355	83,200	+ 7.40	67,935	78,300	—13.24	2,033,000	1,369,000	1,108,000	Ind., Ill., etc.
Okla., Kans., etc.	105,290	96,733	+ 8.85	83,968	92,700	— 9.42	5,230,000	4,569,000	4,572,000	Okla., Kans., etc.
Texas	221,097	207,667	+ 6.47	186,677	199,433	— 6.40	9,123,000	8,056,000	8,419,000	Texas
La. and Ark.	97,032	87,533	+10.85	81,613	73,800	+10.59	5,457,000	4,979,000	3,683,000	La. and Ark.
Rocky Mountain	21,903	20,833	+ 5.13	17,193	15,900	+ 8.13	1,075,000	929,000	555,000	Rocky Mountain
California	341,032	359,467	— 5.13	.....	.....	.....	.....	.....	.....	California
U. S. Total	1,149,032	1,128,567	+ 1.81	1,039,742	1,117,600	— 6.96	32,887,000	29,499,000	26,059,000	U. S. Total
Texas Gulf Coast	160,258	219,700	—27.05	132,710	144,367	— 8.07	7,369,000	6,515,000	7,106,000	Texas Gulf Coast
La. Gulf Coast	54,322	50,467	+ 7.64	44,677	39,033	+14.46	4,597,000	4,298,000	2,980,000	La. Gulf Coast

WIZARD

WIZARD

No. A-3039
No. A-6039

No. A-6040
No. A-3040

No. S-6530

Wherever you see Wizard equipment—you recognize them at once by their brilliant, baked enamel finish. The atmosphere Wizard equipment throws around your station deeply impresses your trade as to the quality of goods inside the container. There is a Wizard unit to fit your particular need.

Wizard Rectangular Units

No. A-6039

60 gallon unit with 14 gauge head and shell. Tank dimensions 13¼″ wide x 37⅝″ high x 29¼″ deep.

No. A-3039

16 gauge head and shell. 32¼″ high x 22″ deep x 10″ wide.

No. A-6040

60 gallon unit with 14 gauge head and shell. Tank dimensions 13¼″ wide x 37⅝″ high x 29¼″ deep.

No. A-3040

16 gauge head and shell. 32¼″ high x 22″ deep x 10″ wide.

No. A-6040 Battery

A battery of 60 gallon Wizard Rectangular Oil Tank Units which represents a storage capacity of 180 gallons in 39¼″ space.

The above rectangular units are made with either standard bracing or internal angle iron bracing.

Square Lube Outfits

No. S-6530

14 gauge head and shell. 31¾″ high x 22½″ square. 65 gallon capacity.

No. S-3030

14 gauge head and shell. 19¼″ high x 16½″ square. 30 gallon capacity.

Compartment Units

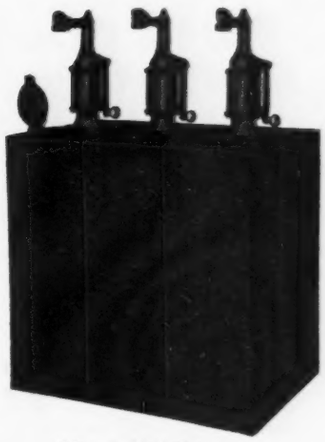
No. C-2-30VL

Glass cylinders, pressed steel legs welded to tank. Tank dimensions 32¾″ high x 33″ long x 19¼″ deep. Capacity two 30 gallon compartments. Can be furnished with 4 legs instead of wheels, casters and no handle.

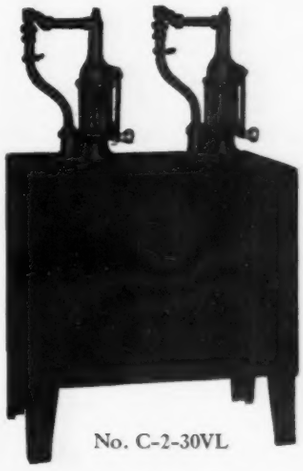
No. C-3-30W

Three 30 gallon compartment tanks. Three 6″ fill openings. Tank 20½″ wide x 54″ long x 32⅜″ high.

Send for new catalog showing Wizard units of every type for lubricating oil, grease, kerosene, alcohol dispensers.



No. A-6040 Battery



No. C-2-30VL

No. C-3-30W

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Totally Enclosed GALLON DISPENSING PUMP

DUE to intensive specialization and large volume production, Bennett offers the trade in the new Model 1500, gallon, half-gallon and quart, overhead discharge gasoline pedestal pump *enduring dispensing service at lowest dispensing cost;* requiring the smallest investment dollars.

Adjustable Quantity Stops

Model 1500

All moving parts are completely inclosed. Finger-tip quantity stops, accurately adjustable, are operated by left hand; air release valve assures quick draining of hose; weather-proof nozzle socket keeps out rain; brass cylinder foot valve, etc. guards against corrosion. Pump handle has extra heavy, cast link for locking. Hose has quick discharge coupling and demountable nozzle.

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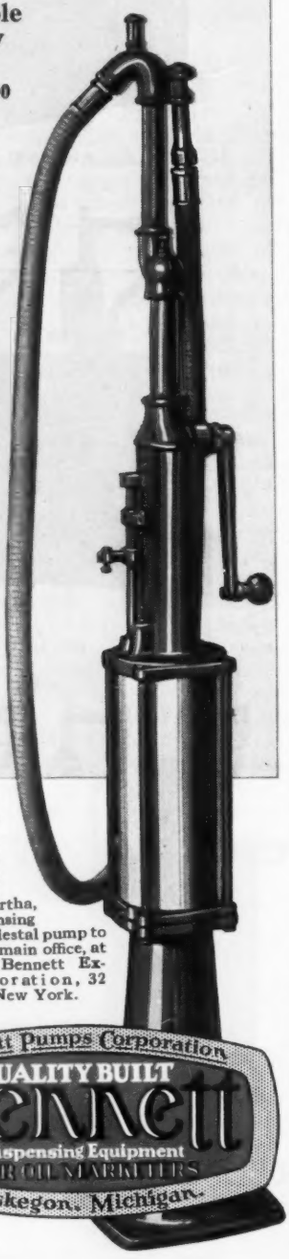

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QUALITY BUILT
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Dispensing Equipment
FOR OIL MARKETERS
Muskegon, Michigan
"Symbol of Quality"

Paraffin Wax Supply and Demand — Pounds

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	54,114,000	460,000	29,228,000	17,842,000	192,835,000
February	47,363,000	2,048,000	23,623,000	20,171,000	198,452,000
March	53,644,000	910,000	28,205,000	23,461,000	201,340,000
April	48,917 000	1,505,000	25,421,000	15,322,000	211,019,000
May	46,267,000	729,000	25,228,000	25,458,000	207,329,000
Total Five Months	250,305,000	5,652,000	131,705,000	102,244,000	207,329,000
June	44,938,000	400,000	24,200,000	29,659,000	198,808,000
July	47,979,000	2,789,000	25,970,000	32,105,000	191,501,000
August	41,576,000	2,656,000	34,229,000	20,859,000	180,645,000
September	47,888,000	3,040,000	31,780,000	29,621,000	170,172,000
October	49,476,000	887,000	28,342,000	21,826,000	170,367,000
November	48,146,000	3,132,000	32,541,000	17,404,000	171,700,000
December	54,039,000	1,906,000	30,569,000	29,862,000	150,638,000
1927 Total	584,347,000	20,462,000	339,336,000	283,590,000	.....
January, 1928	55,320,000	1,117,000	39,712,000	16,878,000	150,485,000
February	49,724,000	1,337,000	38,036,000	13.477,000	150,033,000
March	50,207,000	1,767,000	40,147,000	41,060,000	120,800,000
April	57,548,000	2,996,000	34,122,000	37,212,000	110,010,000
May	51,072,000	1,855,000	34,826,000	24,472,000	103,639,000
Total Five Months	263,709,000	9,072,000	186,843,000	132,967,000	103,639,000

1928, were smaller in all but the East Coast district than stocks a year before.

Lubricating Oils

There was a slight gain in total output of lubricating oils but a decrease in daily average production in May. Exports were a trifle larger but domestic demand was smaller. Stocks rose 42,000 barrels.

Output was increased in the Appalachian, Indiana-Illinois, Texas, and Rocky Mountain districts. Shipments were larger than April shipments only the Appalachian district. There were reductions in stocks in the East Coast, Indiana-Illinois, and California districts.

Stocks May 31, 1928, were 49,000 barrels larger than stocks May 31, 1927, but in terms of days' supply were considerably less, the May 31, 1928, stocks being 86.2 days' supply at the rate of foreign and domestic demand in the first five months of this year, and the May 31, 1927, stocks being 95.2 days' supply, at the 1927 rate of demand.

Average demand in the first five months of 1927 was 93,500 barrels a day and average new supply, all of which was domestic production, was 94,789 barrels a day. Last year average demand was 84,145 barrels a day and average new supply 85,516 barrels a day. Additions to stocks have averaged 1289 barrels a day this year and 1371 barrels a day last year.

Paraffin Wax

Output of paraffin wax in May was considerably under the output in April. Imports were also lower, the total new supply—foreign and domestic—having been 52,927,000 pounds, compared with 60,544,000 pounds in April.

There was a slight gain in total export demand but a fall of approximately 50 per cent in domestic demand. Stocks fell 6,371,000 pounds to 103,639,000 pounds May 31, the smallest volume of stocks since April, 1925.

The Bureau of Mines issued revised statistics of wax covering all of 1928 to May 31. Stocks of finished wax have been lower than shown in previous reports which included oils which since have been converted to barrels and transferred to "unfinished oils." In the table headed "Paraffin Wax Supply and Demand" the 1928 statistics and December, 1927, stocks figure have been revised.

Stocks of wax in the various refining districts May 31 and April 30 compare:

District	May 31	Apr. 30
East Coast	26,111,000	27,090,000
Appalachian	14,044,000	14,872,000
Indiana, Ill.	20,144,000	19,153,000
Okla., Kans.	2,832,000	2,417,000
Texas	6,335,000	8,349,000
Louisiana, Ark.	22,294,000	25,923,000
Rocky Mountain	11,879,000	12,206,000
Total	103,639,000	110,010,000

Gas and Fuel Oils

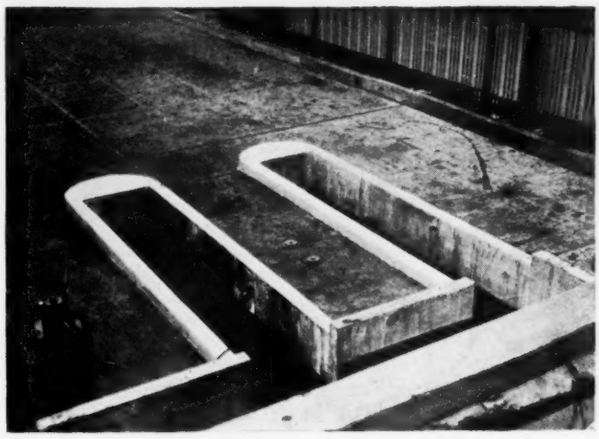
Stocks of gas and fuel oils east of California were increased 3,388,000 barrels in May. Production was increased with the larger crude oil runs in all districts except the East Coast where there was a trivial decline, and California where the curtailment exceeded 18,000 barrels daily average.

Shipments were larger than April shipments in only the Louisiana-Arkansas and Rocky Mountain districts, the decline for the whole territory east of California being 6.96 per cent.

Stocks were added to in every refining district. Because fuel oil stocks are lumped with heavy crude oil stocks in California conditions in that state cannot be ascertained. The May 31, 1928, stocks east of California were 6,828,000 barrels larger than stocks May 31, 1927.

Sam M. Semple, formerly Wichita Falls district agent of the Prairie Oil & Gas Co., has been transferred to Texas headquarters at Eastland, where he became general utility man. He succeeds Ed Cox, promoted to be assistant to John M. Mouser, land department superintendent, when Fred W. Dumraese was transferred to El Dorado, Kansas. Ed Coady, formerly at Eastland, is the new Wichita Falls district agent.

Give 'Em Something to Look At, Says Gifted Grease Salesman



Above—Whitewash makes a grease pit a more attractive place. A coat every day is a good background for salesmanship. At right—Well-kept pieces of machinery, brass shined and enamel wiped, build confidence in the service that is offered

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, July 14

PROMPTLY at 8:30 one morning about three months ago a gaunt young chap presented himself in the outer office of an Independent oil marketing company in an eastern city and made known his wish to see the boss.

"Have you a card?" inquired Mona Lisa behind the P. B. X. board, popping her gum ration in a businesslike manner.

"No," admitted the visitor, unashamed.

"Well, the V. P. and G. M. won't be down 'til about 9:30. What did you want to see him about?"

"He wants to see me," corrected the youth, looking in his hat. "I ain't got nothing else to do so I will just wait for him." And he did.

By some means he crashed the gate. Sometimes a fellow can get admitted just because he does not know enough to say his business is of a strictly personal nature. Besides, nobody would ever mistake this one for a bond salesman or a bootlegger. The hours he keeps are entirely too early for the manicured professions.

"My name is Jacques and I wanted to talk to you about working at one of your oil stations," was the young man's introductory remark as he passed the door bearing the inscription 'Private'.

"We have more men now than we need," answered the management, reaching for a tall stack of unopened letters and cutting the deck.

"I don't think you are getting me," said the visitor. "I ain't asking you for a filling station job. I want you to turn me loose in a grease pit at one of your stations on the edge of town and keep account of the money I turn in for a month. Then if it ain't worth while for both of us you won't have to fire me; I will quit."

"I will stay with you on that deal," said the V. P. and G. M. discarding three envelopes with 1½-cents postage and drawing three more from the deck. "But what do you mean 'Turn you loose'?"

"I mean let me sell oil and grease and let me have what it takes—a bucket of whitewash, a company uniform, a good gear flusher and a pressure gun."

"The station manager will be in here at 2 o'clock, and if you will be back here at that time we will work out the details. I think perhaps you have the germ of an idea."

Jacques met the station superintendent that afternoon and about all they did was select the station where he was to ply his new profession. He did not replace a man but went to work with the other station men, one of whom was expected to work at the pits when necessary.

He was not supposed to report for duty until the next day but he went out to the station that same afternoon and did the "makeready." He cleaned and whitewashed the pits, inspected his new mechanical equipment, shined it until it glittered and, last of all, renewed the flushing oil in the gear flusher.

The flusher had been used before and there was about a pint of thick heavy sediment in the bottom of it. This "muck" he put in a bucket and thinned down with gasoline until he panned about a tablespoon full of small particles of steel from it. He washed these clean and stored them in an eight-ounce sample battle filled with water white gasoline.

These were the tools with which Jacques worked, and the results speak for themselves. In 15 days he sold 300 pounds of gear compound at this one station—more gear compound than the station had sold the foregoing three months. Besides that, he and his companion salesman in the lubrication end greatly increased the sale of motor oil and doubled the daily average number of chassis greasing jobs.

In order to know how Jacques does the work it is almost necessary to see him in action. He does not

Eye and Ear Persuasion

This story tells how a young man sold more grease at one service station in 15 days than had been sold there for the previous three months.

His sales talk is short. He sells the prospect mostly through the eye. The tools of his craft and his sales chatter are herein described.

It is a true story. Although names and places are not told for good reasons, there are plenty of people to vouch for the story if it must be done.

The NILES "Ringseal" Container is offered in sizes holding from 25 lbs. to 100 lbs. Any special sizes can be made.

Patent Pending

BEAUTY—as well as Shipping Safety!

LEADING manufacturers have learned to depend upon the famous NILES "Ringseal" Steel Container for perfect protection of all shipments. It offers BEAUTY as well—and any trade-mark or label design can be handsomely lithographed in full color. The NILES "Ringseal" closes and seals with one simple operation — opens just as easily — and stands even extremes of abuse in handling. Let us send you samples and full details.

THE NILES STEEL PRODUCTS CO.
NILES, OHIO

NILES
RINGSEAL

HEAVY DUTY TRUCK TANKS

The Kind That Will Stand Abuse

ALL SIZES — ALL TYPES

Send us your inquiry

BROWN SHEET IRON & STEEL CO.
ST. PAUL - - - - MINNESOTA

solicit grease jobs from door to door and he uses no literature. He does all his solicitation on the service station drive while the customer is being served with gasoline.

As soon as the regular station attendant has taken the customer's order for what he wants, Jacques walks politely up to the driver's side of the car and starts to tell his story, pointing at the burnished equipment and the whitewashed pit.

"We have just started a new lubrication service for gears here at this station, sir. Every differential and transmission ought to be cleaned out good and new lubricant put in twice a year at least. Any time you have time I will be glad to show you the equipment and explain it to you."

The customer is very likely to come back with, "Why should a transmission be cleaned out?"

The sample bottle with the steel exhibit in it is the answer to that question. Jacques carries it in his pocket. Pulling it out and passing it to the customer he says:

"This is the kind of stuff we get out of gear boxes. If I put that stuff in your transmission with your grease you'd ought to have me put in jail. But it is just as bad to put grease in with the grit as to put grit in with the grease. It's all the same to the gears."

Of course all the prospects do not drive right onto the pits that minute to have their gears flushed. Some of them never do respond to the solicitation. But some of them do have their gears flushed immediately and a great many come back later for the service. Especially do the owners of new cars feel the urge to have their gears cleaned out and lubricated.

A personal interview with Jacques develops the fact that he is a graduate of Alemite's school of greasing. He has had a little garage experience, too. Neither of those antecedents accounts for his merchandising ability. He seems to have been born with that.

"You gotta give 'em something to look at while you talk to 'em," is the way he explains his selling idea. "The whitewashed pits look nice—not as good as a fine greasing palace, but they are all right for summer.

"And nearly anybody that drives a car is interested in machinery. That's why I keep the flusher and the pressure gun out on top where the customers can see 'em, and keep 'em shined up all the time.

"And that bottle with the steel grit in it! Does that put their teeth on edge when they think about their gears chewing on it all the time? They can look at that stuff in the bottle and tell it ain't imagination.

"I could of made a lot better showing than I did if I had started here in the early spring. Along in the spring everybody is more willing to have their cars worked on and their oil changed. Then you can talk to

EDWARD V. O'ROURKE

Formerly with the Gulf Oil Corp., now in charge of the petroleum division of the department of mine engineering at Ohio State university, Columbus, Ohio

them about taking the winter grease out and putting summer grease in. The best times to do this kind of work are in the early spring and late fall.

"The worst draw-back to this racket is that I can't stay long in one place. By the time I've worked at one station three weeks I will be making the same speech to the same man two or three times. I can't know the customers like the regular men here do. After I have told it to everybody once I just about have to move on to another station.

"But 15 or 20 stations, even if they are all in the same town, will keep a guy pretty busy for a year. But he could sell a lot of grease. You can get them on the pit talking about their gears and sell them something else they need before they leave. Nearly everybody likes to have it all done at once. They don't like to be running to the oil station every minute.

"You are doing a fellow a favor to sell him grease you know. The cost of one repair bill will pay for greasing for two years, you can figure it out. And all the time the man's car works better, and it lasts longer and has more turn-in value. There is plenty you can talk to him about while you are flushing his gears."

MILWAUKEE, July 16.—Board of directors of the Wisconsin Petroleum Association has announced eight meetings for Wisconsin oil men beginning with September and ending with May, according to H. A. Rohde, Rohde-Deuster-Hinkley Oil Co., West Allis, secretary. Dates and place of meetings are: Sept. 12, Wausau; Oct. 17 and Dec. 12, Milwaukee; Jan. 16 and Feb. 13, Madison; March 13 and April 10, Milwaukee; and May 15, Green Bay.

The Emperor of the "Oildom" of PENNSYLVANIA

THE jobber who is handling Penn-Empire 100% Pure Pennsylvania Oils in his territory is truly the "nabob" of Pennsylvania Oildom. Monumental in quality as certified under test by one of America's greatest car manufacturers, built to stand up under the gruelling of high road speeds and higher compressions, Penn-Empire lends real quality distinction to the jobber and all his trade.

To the jobber who recognizes the need of lubricants that give greater motor protection, greater mileage, great economy in the new-type automobiles, we confidently urge the Penn-Empire jobber franchise. There are some exclusive territories still available. Write today for details of our proposition.

We will also furnish any jobber with his requirements in oil to be sold under his own private brand name.

PENN-EMPIRE
OILS and GREASES

EMPIRE OIL WORKS, INC.
Oil City - - - - - - Pa.

Original Member of PENNSYLVANIA Grade Crude Oil Association. Permit 19

"When you buy PENN-EMPIRE you get the best"

Service station and store operated by a Frenchman who has grown rich in the reclaimed desert of California. Ninety per cent of the business comes from tourists

Builds Station to Help Reclaim Desert

LOS ANGELES, July 12

A LONELY French boy, a stranger in a strange land, landed in California in 1888, only 17 years of age, and began to try to get his bearings at Pomona, with a very few dimes in his pocket.

Today, 40 years later, he pays taxes on more than 700 acres of former desert land, and during his spare moments assists his daughter, who attends high school during the school months, to operate his highway service station, grocery store and cold drink stand. The fact that he is paying taxes on property easily worth a million dollars apparently has not changed him in the least, other than in age and experience.

J. B. Lafourcade, the Frenchman under discussion, after buying more and more land, and setting this land out in grape vines and walnut trees, making it necessary that he employ a number of men, had his attention forced to the need to provide a store and other conveniences nearby for these men.

He experienced much trouble early in his career in training men to his way of working, only to lose them to others who were willing to pay them more money, after they had been through a course of training.

For these reasons, Mr. Lafourcade erected the building seen in the picture, the most prominent part of which is the service station for the sale of gasoline and oils. The store at the start was for the convenience of his employes, but he has since learned that tourists will step into the store and make purchases while their gasoline tank is being filled.

He has found that the installation of the gasoline pump and establishment of the store and cold drink counter is a profitable venture.

The service station and store is located on Foothill Boulevard, the main highway from Cajon Pass through San Bernardino to Los Angeles, traveled by tourists coming into southern California. The station and store is some four miles from Cucamonga, a small town about 50 miles from Los Angeles.

Not to exceed 10 per cent of his gasoline sales goes to neighbors. The real bulk of the trade comes from tourists. On days when there is little travel, sales sometimes will not exceed 50 gallons, while on Sundays and holidays, the gallonage may run as high as 1500. On a recent holiday, 35 cars were counted as they stood in line waiting for service. Naturally the store was doing a good business during this waiting period.

Although Mr. Lafourcade did not marry until he was 31 years of age, he boasts of seven children, three sons and four daughters. One daughter, Miss Marie Louise, is charged with the direct responsibility of running the service station and store, with the help of her sisters and brothers, and with the added assistance of her father, who spends all of his spare time at the business.

Miss Marie Louise attends high school, but her off time is fully occupied. The father still remembers his French upbringing and no member of the family is permitted to be idle.

Miss Marie Louise says there is no doubt that the service station draws much business to the store. She does not make a specialty of lunches, but can furnish coffee, sandwiches, etc. She says her father, if about the service station, is a good mechanic and if a customer is having trouble with his car, will help out and often solve the trouble, if only a minor one.

The service station and store is a sideline only.

But the canny ability of making a pleasing impression upon all who stop to buy or talk, would indicate that had the Lafourcade family adopted as its vocation the operation of a super service station, real profits would have been the results.

Back in 1892, Mr. Lafourcade bought 50 acres of desert, yet unclaimed, for almost a song, agreeing to sing most of the song at a later date. He kept buying land. He drilled a well when everyone told him he would never get water. But one well 600 feet deep, equipped with a good pump, furnishes him with ample water for the entire tract.

His neighbors have never been able to find this same water stratum located by the lucky Frenchman. Luck seems to be with him. He won a blue ribbon with his English walnuts. The bottom fell out of the price for raisins, and he had to replant most of his acreage to another variety of grapes—and then had to wait five years for the new vines to come into full bearing. But he no longer has to wait on anything.

Even the tourists seem drawn to his station. And they buy gasoline and oil, while the women in the tourist party patronize the grocery store.

Thomason is Transferred To Ponca City

TULSA, July 13.—L. E. Thomason, who has been manager of the Marland Refining Co.'s offices at Kansas City for the past six years, has been transferred to general offices at Ponca City. He has been made assistant manager of the wholesale department.

* * *

Joe Mason has been promoted to be superintendent of the motor transport department of the Pure Oil Co. in the Texas division.

* * *

Robert E. Connell, sales manager of the Staytite Co., Houston, has returned to headquarters after a business trip to the Pacific Coast.

Oil Trademarks for Copyright

The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C., trade-mark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"COMMODORE" No. 266,223. Sinclair Refining Company, New York City. For lubricating oils.

"COREX" No. 264,262. Standard Oil Company of New York, New York City. For petroleum and products of petroleum, for heating, power, lubricating, greasing, etc.

"ZACO" No. 265,938. The Zip Abrasive Co., Cleveland, Ohio. For lubricating oils.

"SCOUT" No. 266,222. Sinclair Refining Co., New York City. For lubricating oils.

Pennsylvania Oil PLUS

Plus what? —Plus the fact that it is blended from 450 Bright Stock (Sharples Process) refined in ONE Freedom Plant — and from 100% Pennsylvania Crude Neutrals refined in ANOTHER Freedom Plant. Thus, under one supervision, with the one guarantee of a 48 year old refinery, a line of Freedom 100% Pennsylvania Motor Oils is blended to specifications which appeal to discriminating jobbers — a complete line of oils that enable you to build your business and your customers' businesses on repeat order foundations.

For nearly 50 years, The Freedom Oil Works Company has specialized in the refining and blending of 100% Pennsylvania Oils. In one way, that explains why jobbers the country over come to this concern for their requirements.

Deliveries can be made immediately, in tank cars, compartment tank cars, barrels, or drums.

Write for quotations.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

450 Bright Stock (Sharples Process) which requires less Neutral to blend to the ordinarily required specifications.

100% Pennsylvania Motor Oils, *blended to your own Specifications*, from Freedom 450 Bright Stock and Freedom 100% Pennsylvania Crude Neutrals.

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.

Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

Rivalry is Still in Putting Out Pumps Not in Selling for a Profit

CLEVELAND, July 14

CASUAL observation of the distribution of gasoline pumps along the tourists routes of northern Ohio leads one to conclude that oil companies are still more interested in getting out the largest number of pumps possible than in making each pump installed dispense the largest possible gallonage.

Pumps are thicker than ever this year along the main highways. Every cross road, it seems, has one to three filling stations and many stations have been built between cross roads. Pumps have also been placed in front of every lunch stand, barbecue, general store and what not.

In a drive of approximately 100 miles along two highways which are traversed by thousands of automobile tourists each year, little effort was observed by which gasoline distributors—refiners and jobbers—sought to tie up their stations or dealers so that a motorist who was using a particular brand of gasoline would know just where he could find that brand when he would need fuel again.

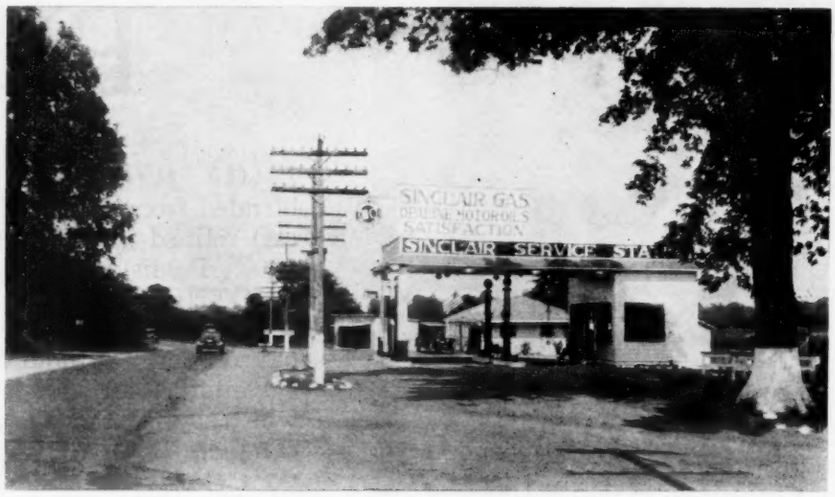
The only consistent effort noted was by one company, a refining company, whose distinctive signboards were placed at mile intervals. These signs told just how far it was to the next service station where that company's brand of goods could be bought.

Another company had several well placed service stations. One the writer has particularly in mind was placed at the outside bend of a heavily traveled highway where it would be seen by the motorist a half mile regardless of the direction he was driving. This refining company also had a signboard at the roadside near one station saying that its brand of gasoline and oils could be bought at a station a quarter mile distant.

These were the rare exceptions to the general rule of not marking approaches to stations although distributors have put in two or three and sometimes four pumps at stations which, under Ohio highway regulations, must set clear of the road.

It was not unusual to be upon these stations when driving only 35 miles an hour and not know you were approaching a place to refuel if refueling had been necessary. Of course, if the motorist's gasoline supply was very low he would stop and back up but, if he had a gallon or two left, he would take a chance on finding another station farther along that appealed to him.

The general conclusions reached from these observations are that oil companies large and small, have indulged in rivalry for pump installations rather than in rivalry for profits. Little effort has been spent on good merchandising and good advertising.



Here is a well placed service station at North Perry, O. It is visible for half a mile in either direction. It also is easily entered and left. It is on the outside of a bend in the Cleveland-Buffalo highway. It is owned by D. W. Radcliffe

How simple it would be to place at each dealer's station a sign telling the distance to the next station or stations where your gasoline could be bought. Then a quarter or half mile from the station could be placed a sign reading, "Get (Sure Shot) Gasoline ¼-Mile Ahead on the Right," or on the left. Then the motorist who had his throttle wide open would have a chance to slacken his speed and look out for the station.

An appeal to comfort which F. H. Taylor uses at his station in Cleveland Heights, O. This neat sign placed at the curb of a well traveled road may stop either transient or local trade after many other stations have been passed

Signs could be durable but inexpensive, and the investment probably would be considerably less than the present system of trying to see how many pumps can be placed along a highway and then not letting the prospective customer know they are being approached.

Stations that have been in business along tourist highways for several years are feeling a loss in gallonage through the large increase in wayside pumps. The operator of one such station in a small town on the Cleveland-Buffalo highway, said gallonage was considerably lower this year than in the last few years. He laid this decline principally to the erection of six other stations within a mile of him since the first of this year but added that slackness in business generally and rainy weather in June probably had something to do with the loss of gallonage.

Operators of other stations, some oil company owned and others individually owned, said business was not brisk. In most instances the cause was said to be too many outlets.

Low gallonage does not seem to deter multiplication of outlets. On one street in the outskirts of Cleveland was observed a gasoline station and barbecue under construction. Four pumps were being installed, although there were about 30 or 40

pumps already on the street in a stretch of perhaps two miles.

The builder expected to make as much or more from his lunchroom as he would from the gasoline and oil business. He was putting in two greasing pits and an oil house. He said he would have no oil except in bottles in the service station salesroom which adjoined the lunchroom. On the second floor he was building his kitchen, a small tearoom with balconies for four two-person tables, and two toilets.

When motorists do stop at the wayside station it is an even chance whether the service will be good or listless. Such details as toilets which may lure a tourist into a station and result in his filling his tank and replenishing his oil, are often neglected.

While gasoline gallonage along a tourist route may not be increased by better merchandising, surely better merchandising would make unnecessary the great and unprofitable duplication of outlets. Better merchandising would return larger profits with less overhead expense to the jobber or refiner.

Galena Signal Sale Not As Yet Confirmed

HOUSTON, July 12.—No confirmation is obtainable in Houston of reports from New York that the Galena Signal Oil Co. of Pennsylvania has practically completed negotiations for sale of its subsidiary, Galena Signal Oil Co. of Texas, to The Texas Corp., for an amount said to approximate $7,500,000.

Galena Signal Oil Co. of Texas, owns a Houston ship channel plant now shut down in receivership, in addition to extensive marketing facilities in southeastern states and abroad. The Galena Signal is the only company of the J. S. Cullinan group which is not a subsidiary of the American Republics Corp. Mr. Cullinan and associates, however, own a substantial interest in it.

Oil Jobber Out for U. S. Senator

ASHTABULA, O., July 14.—H. D. (Hi) Cook, head of the Central Standard Service Co., is running as a liberal Republican candidate for short term U. S. Senator.

Mr. Cook has been active in politics for many years, having served as mayor of Ashtabula some 20 years ago. He has also been a member of that city's council for a number of years.

The service stations which Mr. Cook operates between Cleveland and Conneaut, O., on the Chicago-New York highway are distinguished by their three and four-drive canopies which stretch out to the street where the motorist can see them from afar.

When they pay with coupons

They say, "*Fill it up.*"

Hundreds of filling station owners, who use Coupon Books, have found to their surprise that book owners usually say, "Fill it up", instead of "Put in five."

This fact alone justifies the use of Coupon Books, but another reason equally strong is that motorists with your coupon books, will drive out of their way to patronize your stations, where the coupons serve as cash.

Coupon Books, will increase any station's business — make buying more convenient and often.

That is why companies like Sinclair, Texaco, Associated Oil and many others both large and small use coupon books.

And invariably they prefer Rand McNally Coupon Books.

For Rand McNally & Company are *specialists* in coupon book and ticket printing of every kind. They have skilled workers, a large modern plant, the latest equipment. Thus the cost of producing high class work is held to the minimum.

Play safe. Your coupon books represent cash. You and your customers need 100% protection. Before placing your next order, write for samples and prices.

Special and stock designs in wide variety are on hand for selection by any oil company desiring to install the coupon book system.

RAND McNALLY & COMPANY
Dept. S-13

270 Madison Avenue, New York
536 S. Clark Street, Chicago
559 Mission Street, San Francisco

NATURAL GASOLINE

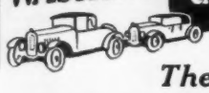
Grades A · AA · B · BB · C
CONTRACT OR SPOT

WILLOCK OIL CORPORATION
First National Bank Building · Phone Atlantic 3110
PITTSBURGH, PA.
52 Years Experience · It Counts

Complete Your Service

Gas and Oil Greasing Air & Water CAR WASHING

with this efficient inexpensive **CAR WASHER**



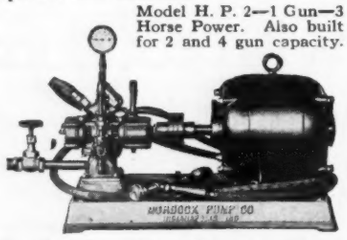
The

MURDOCK CAR WASHER

is a real business getter and money maker

It washes cars cleaner, faster and with less labor. It costs little to install, operate and maintain.

Model H. P. 2—1 Gun—3 Horse Power. Also built for 2 and 4 gun capacity.



Built like a Fire Engine Pump

It develops 300 pounds of direct water pressure (no compressed air). With a slight turn of the handy nozzle the spray may be adjusted from a concentrated stream of terrific force that quickly knocks off caked mud and dirt, to a finely atomized mist that will not injure the finest body finish. It is simple and compact in construction and absolutely dependable.

Illustration shows complete outfit ready to attach the motor to electrical connections and the pump to the water main.

Send for further information.

MURDOCK AIR COMPRESSOR

Unmatched in—

Performance, Durability, Appearance.

Offers many advanced features of construction, foremost of which are—DIRECT DRIVE, Eliminating Power Waste—EXTRA LARGE OIL AND WATER TRAP AND IMPROVED INTAKE MUFFLERS, supplying cleaner, drier air.

To see it in action will convince you of its outstanding merit.

Model A. C. 14 (14 cu. ft. of air per min. capacity).

Distributors—We have an attractive exclusive offer.

MURDOCK PUMP CO.

INDIANAPOLIS, U.S.A

ON THE LAZY BENCH

National Petroleum News

Generous Uncle: "Have you got a dime bank, Willie?"

Wise Willie: "Nope, but I got a bill fold."

—*Stanolind Record.*

* * *

A Scotchman rang up a doctor in a state of great agitation.

"Come at once," he said, "ma wee bairn has swallowed a saxpence."

"How old is it?"

"1894."

—*Skelly News.*

* * *

Traffic Cop—"Don't you know you can't turn around in the middle of the block?"

Mrs. H.—"Oh, I think I can make it, thank you."

—*Stanolind Record.*

* * *

As Confucius said: "Men trip over molehills—not mountains."

—*The Texaco Mission*

* * *

A teacher in a grammar school wished to impress on her pupils the value of originality, so she said, "Thomas, repeat these sentences after me in your own words:

"I can see a cow. The cow is pretty. The cow can run."

Tom replied: "Lamp de cow. De cow is dere. Ain't she a beaut? An' say, baby, she sure kin step!"

—*Stanolind Record.*

* * *

Now, What Would You Do?

An angry lady rushed into the marriage license bureau. In her hands she bore a license. To the clerk she said:

"Did you, or did you not, issue this license for marryin' me to Albert Briggs?"

"Yes, I believe we did. Why?"

"Well, what are you going to do about it," she demanded. "He's escaped!"

—*WoW.*

* * *

Only a small per cent of the girls of our country are working girls, the rest are working men.

—*The Pure Oil News.*

* * *

Acted Like Fools

It was along a beautiful stretch of highway and the telephone line along the way was in the hands of repairmen. She was driving and cooing, when suddenly she spied the men climbing the poles.

"Elmer, just look at those fools," she exclaimed. "Do they think I never drove a car before?"

—*WoW.*

Whose Car?

When it's newly washed—Mother's.

When it's overhauled—Son's.

When there's a dance on—Daughter's.

When it needs repairs, fresh paint, five new tires and a tank full of gas—Dad's.

—*WoW.*

* * *

A mother, discovering her small daughter washing the kitten with soap and water, exclaimed:

"Oh, Betty darling, I don't think the mother pussy would like her kitty washed like that."

"But, mother, I really can't lick it."

—*Stanolind Record.*

* * *

A local man has discovered a method of getting to work early each morning. He has made arrangements with his daughter to call him when she comes in.

—*The Pure Oil News.*

* * *

Recipe Probably Marked "Delicious"

Young Wife: I'm afraid, dear, my pie is not what it should be. I think I must have left something out.

Husband (with a grimace, after sampling it): There's nothing you could leave out that would make it taste like that. It must be something you put in.

—*WoW.*

* * *

She called her sweetheart Pilgrim because every time he called he made more progress.

—*The Pure Oil News.*

* * *

The Slave Driver

The Man Next Door is a tryrant. He makes us live in a style we can not afford and model our lives against our own best interests. His real name is What-Will-People-Say.

—*WoW.*

* * *

Daughter: "But smoking doesn't do any harm, Mother."

Mother: "Then for goodness' sake how did you ever come to take it up?"

—*Skelly News.*

* * *

Tag, John's It

Mother: "It is whispered that you and John aren't getting on!"

"Nonsense. We did have some words and I shot him, but that's as far as our quarrel ever went."

—*The Pure Oil News.*

UNEQUALLED for Blending and *It Costs Less*

This wholly distilled product of rich golden color and lowest carbon content has never before been equalled in quality.

It costs you less than other stocks of even lower quality—because our enormous production makes low price possible.

Meets every requirement of a heavy blending oil.

SPECIFICATIONS OF NO. 96

HIGH FLASH — HIGH FIRE — LOW COLD TEST
LOWEST CARBON CONTENT — GOOD DEMULSIBILITY
VISCOSITY 80-90 AT 210° F. — PALE COLOR — PRICED RIGHT

Write for Booklet, Mixing Charts and full particulars

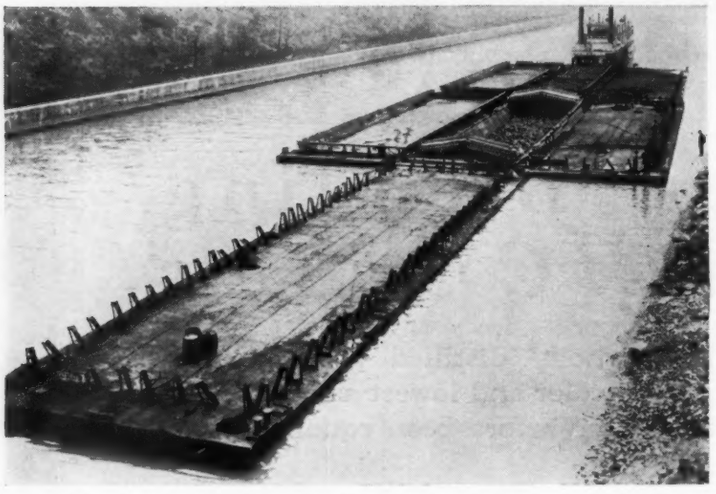
SUN OIL COMPANY PHILADELPHIA

Branches in Principal Cities

No. 96 GOLDEN

VISCOSITY 80-90 at 210° F.

River Transportation May Help Refiner Reduce Cost of Marketing Products



Float of Barges arriving in Louisville with 24,907 barrels of crude oil for Standard Oil Co. of Kentucky. It includes a barge load of pig iron and a tender barge for the towboat

By Ward K. Halbert
N. P. N. STAFF WRITER

LOUISVILLE, Ky.

WATER transportation is being discussed more and more by oil men whose storage is close to navigable waterways. Interest in the subject is not confined to any locality but seems to center in the Ohio river valley for several reasons:

The $100,000,000 canalization project of the United States government in the Ohio river is about completed. Fifty locks and dams between Pittsburgh and Cairo, Ill., maintain a 9-foot, year-round river stage. The distance is approximately 1000 miles.

Besides being better equipped than most other inland waterways the Ohio is a busy stream. It flows through thickly settled regions. It has many industrial towns on its banks. Moreover, the climate is such that ice seldom interferes with navigation.

Oil men all along the river are speculating about a day when gasoline barges from St. Louis, Memphis or even from the refining centers of the lower Mississippi, will tie up alongside their bulk plants to be unloaded. It is not being done yet.

But the use of the river is increasing. The tonnage is probably four times as heavy now as it was in 1922, and a considerable part of it is petroleum, due to activities of Standard Oil Co. of Kentucky barging crude from the field to the Louisville refinery.

Shipping of oil on the river has increased greatly since the close of the war but oil still constitutes such a small part of the total freight that little attention is paid to it. In 1927 petroleum was approximately 1 per cent of the river's total tonnage, but it was not half that in 1922.

Thus, it will be seen, that oil shipping has increased nearly twice as fast as river traffic generally in the last six years. Figures obtained from the office of the United States district engineers in Cincinnati show that oil freight increased from 30,000 tons in 1922 to 130,000 in 1927.

Figures at seven barrels to the ton, the increase is 14 million barrels. Before 1922 the oil tonnage was so small that no accurate record was kept of it.

Even now the government offices do not make any distinction between crude oil and refined products but C. I. Grimm, assistant to the district engineer, says that by far most of the oil freight on the river is crude oil going to the Standard's Louisville plant, the average haul being 120 miles.

Practically all of Standard's crude supply comes to the refinery by barge. The company does not operate a pipe line and receives only a little by tank car. Cattletsburg, Beattyville and Ravenna, Ky., are the principal loading points where storage is maintained by the Producers or the Cumberland Pipe Line Co. Standard of Kentucky does not move any refined products by water.

The fact that the company has been turning out gasoline at the Louisville refinery since 1918, drawing upon fields of rather consistent production, indicates that it is cheaper to barge crude oil more than 100 miles down stream than to build and maintain a pipe line. The American Barge Line Co. of Louisville handles all of the crude oil for the Standard. The rate is withheld.

Oil barges look very much like any other barge, in fact the American Barge Line Co. occasionally uses its oil barges to transport other kinds of freight, not using the oil compartments, of course, but loading the material on deck. The great difference is in the construction below deck.

None is used in the oil service on the Ohio river but all-steel barges. They are divided into eight or ten compartments by one longitudinal bulkhead and four or five transverse. There is a hatch from deck to each compartment. The biggest of them holds between 5000 and 5500 barrels. Compartments are connected by valves controlled from deck, so the whole barge may be loaded through one hatch, but they can be isolated so one compartment may be unloaded at a time.

The newer oil barges are equipped with unloading lines as well as steam coils to expedite unloading in cold weather. Elaborate wharf facilities are not necessary to handle oil. At the refinery the Standard uses an "unloading float" which is just a small barge with a shelter house on it containing an electric power unit and a pump.

Although it is not the general practice, oil is unloaded occasionally through the hatchway. It is done by the simple method of sticking a line into the compartment and pumping the oil out. Unloading lines are regularly 6-inch and rarely smaller. The barges are not flat bottom so the

Now -

I can serve 2 kinds of gas....

with my Erie Tandem Meter Pump

WHATEVER grade of gas the customer prefers, whether Ethyl, High Test or Motor, the Erie Tandem Meter Pump puts it conveniently at hand. The Erie Tandem is a double service pump equipped with two separate pumps and two or four separate meter outlets. Its purpose is to eliminate much of the confusion at gas stations that has arisen with the growing popularity of High Test and colored fuels by making it possible to supply two grades of gas instead of one at a single stand.

So no matter where the customer happens to drive up, the kind of gas he wants can always be convenient and accessible. He doesn't have to look around for the particular pump that holds Ethyl gas, or shift about and change this position if he happens to mistake it. The Tandem speeds up sales and service and increases the efficiency of the station.

And while the Tandem does the work of two separate units, it occupies little more than the space of a single one. For busy stations with limited grounds it is invaluable since it practically doubles their possibilities of business. Send the coupon now for free bulletin describing Erie Tandem Meter Pumps.

No. 462-P Tandem Meter Pump. Furnished with 2 to 4 meter outlets and two separate pumps in each cabinet. Air pressure system or remote control electric pump system. Available in your advertising colors.

(Right) No. 162-H Tandem Unit for masonry installation. Masonry fronts can be furnished in vitrolite enamel, same finish used on kitchen ranges. Requires no repainting and can be kept spotlessly clean. Furnished in standard colors—red, orange, light green and gray; also in black and white; or can be furnished plain for painting in advertising colors of service station.

ERIE
METER SYSTEMS
INC.
ERIE, PENNA.

Erie Meter Systems, Inc.
10th and Wallace Sts. • Erie, Penna.

Send me descriptive bulletin of Erie Tandem Meter Pumps.

My Name.....

Company.....

Address.....

City..... *State*.....

deepest part of any compartment is the narrowest. Consequently any compartment can be pumped empty, though not quite dry, with a line through the hatch.

One experienced navigator on the river says some of the newer barges are 275 feet long and 55 feet wide. He estimates their cost at $100,000 including self-contained power unloading machinery. The loading and unloading line runs full length of the barge and, by the use of valves, any single compartment can be unloaded at a time.

Standard Oil Co. of Kentucky does not ship any refined products by water because the Louisville refinery's output is used to supply outlets in Kentucky only. Hauls to points in the state are so short that the cost of loading tank cars from barges at river points would exceed the saving in rail freight, according to A. K. Whitelaw, vice president of the company.

The Kentucky company's marketing territory embraces Mississippi, Alabama, Georgia and Florida, all of which are maritime states, but the Louisville plant does not ship into them, to any great extent. They are supplied with gasoline bought of Standard Oil Co. of Louisiana and shipped from Baton Rouge.

The Louisville company operates barges out of Baton Rouge, shipping gasoline as far north as Memphis with which its trade in Tennessee is supplied. The company uses its own equipment and costs are a matter of speculation to the trade in general.

The government barge line on the Mississippi river transports oil of all kinds at the miscellaneous rate which is about 80 per cent of rail rates, but this is not considered fairly indicative of possible savings by water shipment.

Mr. Grimm, the U. S. engineer, says that oil shipped by water should average about one-third the cost of rail shipment on long hauls. It can be moved by barge from New Orleans to Cincinnati he says for about $3 a ton which, for rough figuring may be called 40 cents a barrel or 1 cent a gallon. The same shipment by rail is between $9 and $10 a ton.

It was war-time conditions that started the Ohio river to coming back, Mr. Grimm says. The war developed unprecedented demands and the government, at the same time, had control of the railroads and their equipment so private interests often were unable to get rail shipments.

It was then that the rivers, almost abandoned as arteries of commerce, began to be used. By using them, business men experienced economies in freight and have never ceased. From 1918 until now the use of the river has been growing. But the fastest growth has been in the more recent years, since the locks and dams prevented interruptions in traffic by low water.

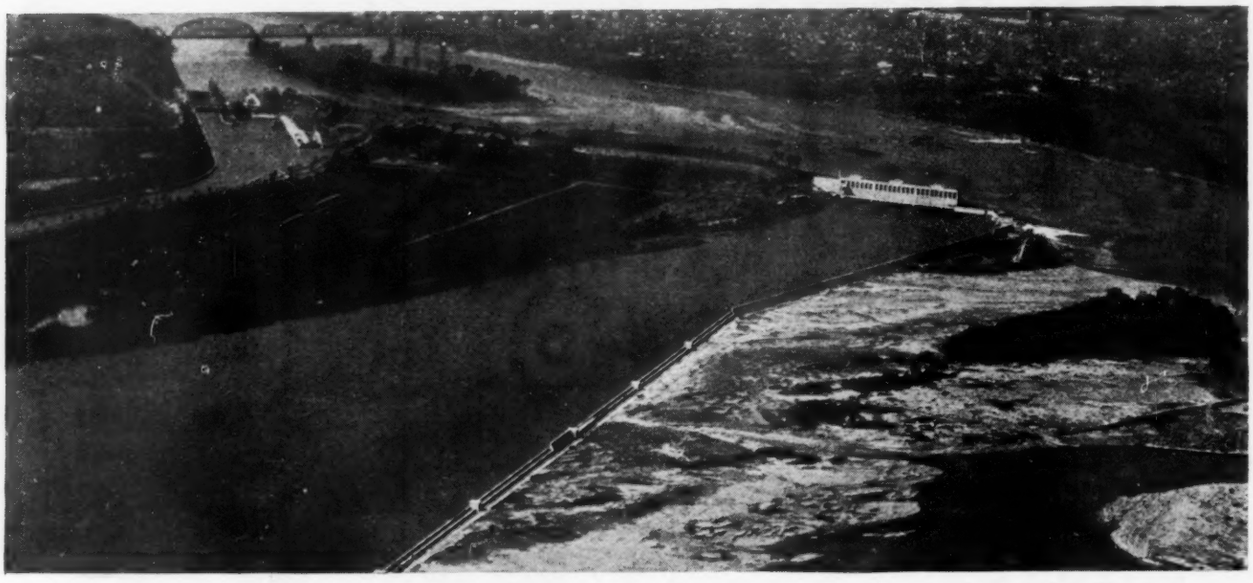
Water transportation is slower than rail, which accounts to some extent for its original abandonment. But time is not an important element in certain classes of shipments and, in a measure, oil is one of them.

Passing through locks has a tendency to make river traffic even slower but those on the Ohio river are not used except when they are absolutely needed. During the dry months of the year they serve to hold the stage but in the flood season (usually Dec. 1 to June 1) the dams lie flat in the bed of the stream, offering no obstruction to river craft.

So far the use of oil barges is only a potentiality, although the practicality of their operation in some sections is known. Experts say one of the biggest hurdles in the path of extended water transportation is adequate wharf facilities, and in this respect the oil man has an advantage. His unloading problems are simpler than those of most wholesale merchants.

Just how soon other streams will be made as useful as the Ohio river is another matter of speculation. Even after the government appropriates the money, it is a slow development. Chicago newspapers had quite a little to say recently about a news dispatch from Washington to the effect that the Mississippi barge line might soon be extended to Peoria, Ill., on the Illinois river.

The latest flurry of excitement on the subject in oil circles resulted in Chicago recently when a Minneapolis business man called on several Chicago oil men and asked to figure on the volume of business they could throw to a projected barge line that might operate tank barges between lower Mississippi points and the "Twin Cities."



Dam No. 41 with the hydro-electric plant in view and New Albany, Ind., in the distance. A sample of 50 such installations on the Ohio river. Airplane picture by Caufield & Shook

OHIO RIVER FREIGHT

Year	Tons of Oil	Total Tons
1922	30,000	6,291,000
1923	50,000	8,280,000
1924	82,000	10,866,000
1925	271,000	15,737,000
1926	318,000	19,754,000
1927	230,000*	22,106,000

*Falling off in 1927 due to period of suspended operation at refinery in Louisville.

Pure Oil Knows!

—the globe atop the pump says: "This is the place to get it!"

The first line of this Pure Oil Company newspaper advertisement points attention to the "blue-and-white pump globe!"

Pure Oil knows that their advertising globes are an important part of their marketing. The globe must say "Get it here!"—must say it in a brilliantly attractive way—and keep saying it *indefinitely!* Pure Oil uses CINCINNATI GLOBES.

Cincinnati Globes keep on "saying it"— because they are *permanent*—they are *everlasting!*

Cincinnati Globes reproduce your advertising design in brilliant *ceramic* colors which are *fired* into the glass at glass-melting temperature—the colors actually become a part of the glass, free from fading, peeling or oxidation.

Because of their beauty, brilliance, superior advertising value and long life, Cincinnati Globes are the unreserved choice of leading oil marketers. You, too, will find them the most satisfactory investment for your advertising dollars.

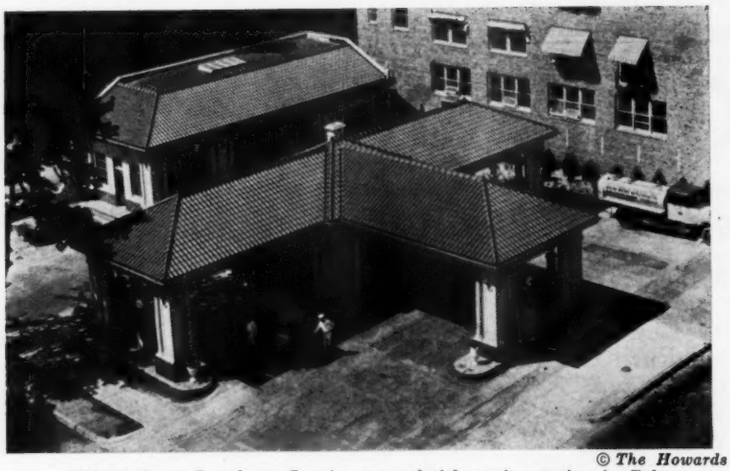
Write today for quotation.

THE CINCINNATI ADVERTISING PRODUCTS CO.
York & Colerain Cincinnati, Ohio

Your trade design can be reproduced in these everlasting Cincinnati globes at very attractive prices. Our Art Department will create a new design for your product—its services are at your disposal.

CINCINNATI GLOBES

SELL MORE GASOLINE AND OILS



© The Howards

Mid-Continent Petroleum Corp.'s new palatial service station in Tulsa

Enters Retail Marketing in Tulsa With Elaborate Station

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, July 12

THE Mid-Continent Petroleum Corp. opened the largest and most expensive service station in Tulsa on July 2, marking its entry into the retail marketing of gasoline and motor oils in this city. The station is almost the first opened by the company in Oklahoma.

In the past two years that the company has been developing its own distributing division most of the stations built or purchased have been located in the marketing territory of the Standard Oil Co. of Indiana.

When it was first planned to erect a service station in Tulsa, the city in which the company maintains its general offices and has its 40,000-barrel refinery, officials of the company determined to make the plant one of the show places of the city and one of the finest service stations in the United States.

The site chosen was worthy of a beautiful building. It is at the corner of Fifth street and Cincinnati avenue. It is just across Fifth street from the beautiful new 10-story home of the Tulsa club which is in turn beside the new 23-story Philtower recently completed by Waite Phillips. Across Cincinnati on the east is the Episcopal church building, one of the finest pieces of Gothic architecture in the southwest. The west half of the block on which the station has been built is owned by Waite Phillips and is understood to be the site for a large hotel in the future.

The Mid-Continent station was planned to carry out in every detail the color scheme of the company's diamond trade mark, which is red, cream and black. Both the station proper and the grease house at the rear of the site are built of cream terra cotta tile on a base of red granite. Roofs of the canopies and both buildings are of red tile. The station drives have inlaid diamond trade marks of colored concrete.

Except for the globes carrying the diamond trade mark on top of each gasoline pump and oil fountain, all lighting of the station is indirect. There is no glare about the station either by night or day. The only signs about the structure are inlaid in the terra cotta across the canopies and over the entrance to the grease house.

Under each of the three canopies are four gasoline pumps, one oil fountain and two air and water outlets. Driveways are 19 feet wide and are not obstructed by center islands to require careful driving by customers. Two of the gasoline pumps beside each drive are used for dispensing NevrNox gasoline (the company's anti-knock brand) and two the competitive grade.

All lubricating oil tanks are located in a basement under the salesroom. Oil is forced from these by compressed air to the eight visible tubes of each fountain, individual lines being used for each grade.

The gasoline supply for the twelve 10-gallon, electrically operated, visible, wet hose pumps is drawn from six 1,000-gallon underground tanks. Gasoline lines are arranged so that no two pumps under one canopy are drawing from one underground tank simultaneously. Suction and return lines from each pump are within a 6-inch line. In the event that a certain pair of lines require repair, it is necessary only to break the concrete at the pump and at the tank, disconnect the lines at each end and withdraw them through the 6-inch line without injury to the driveway.

Water and air service lines are arranged so that they disappear when not in use. Each line is drawn beneath the surface of the island by a weight operating over a pulley. Lines are available on each side of each driveway.

Equipment for lubrication consists of three pits, one rotary lift, one air operated stationary grease gun with two outlets at each pit, one portable, air operated grease gun for the lift, a gear flusher and a spray gun for each pit. Waste oil from crankcases is drained into funnels connected by swing-joints and piping to an underground tank. Wheel guide curbs at the pits are outside the wheels.

To provide an ample supply of compressed air for tire service, lube fountains, rotary lift and grease guns a flexible system is required. The 1 horsepower, 4½-cubic foot compressors have been installed. These are connected in such a manner that any two can care for the requirements of the plant with the air shut off between. One compressor can be kept as stand-by equipment.

THE FASTEST VISIBLE

Fills In 20 Seconds
Drains In 20 Seconds

Astral Glass Bowls
Make Gas Look Like Crystal

Biggest Value On The
Market—Wet or Dry Hose

Simplified, Trouble-proof
Design

A Revelation In Ease Of
Operation, Speed and
Satisfaction

Meets Requirements
Of All States

Commanding, Dignified
Appearance Attracts
Trade

Used By Over A
Thousand Oil
Companies

PRICES

Type 585—Hand-Bottom Up Serve	$114.
Type 625—Hand-Top Down Serve	117.
Type 586—Motor-Bottom Up Serve	172.
Type 626—Motor-Top Down Serve	175.

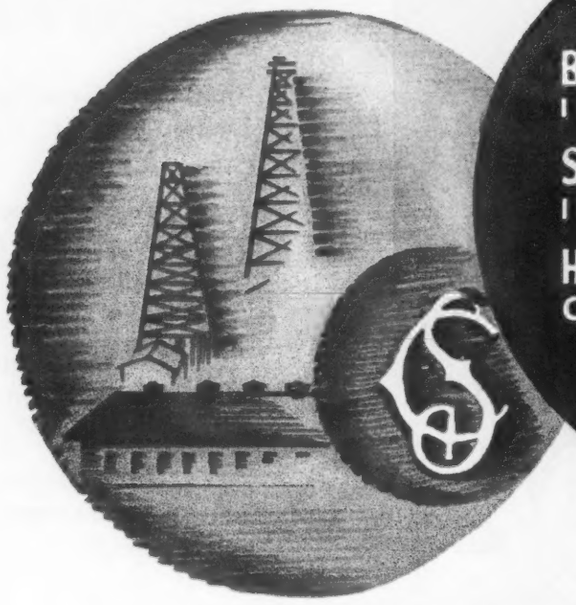
F. O. B. Milwaukee

Eye Measure
Visibles Also.

MILWAUKEE TANK WORKS
Milwaukee, Wisconsin
New York—Woolworth Bldg.

MILWAUKEE
The Pump of Compulsory Accuracy

Chestnut & Smith
CORPORATION
AND AFFILIATED COMPANIES

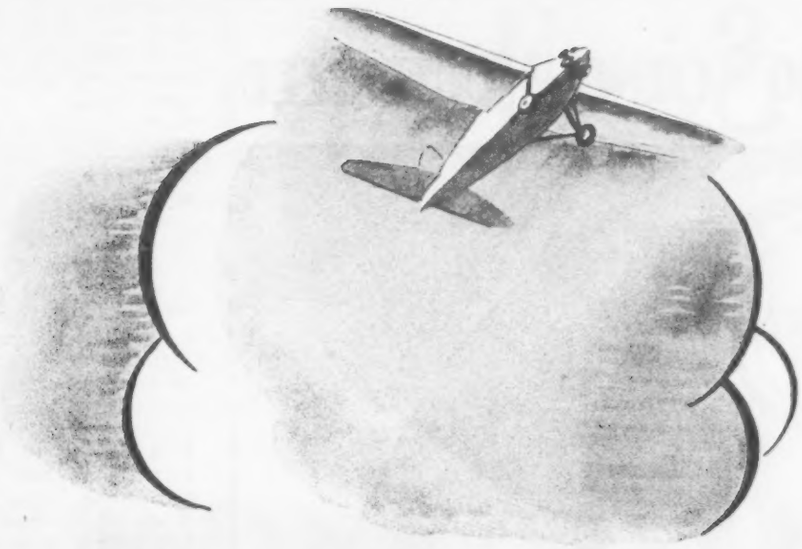


BROOKS & HANLON
INCORPORATED

SMITH HANLON
INCORPORATED

HANLON GASOLINE
COMPANY

The new company will be under the direction of the officers of Chestnut & Smith Corporation, and will have its head office in Tulsa, Oklahoma, with a plant at Westwego, Louisiana (on Tide water) fully equipped for the manufacturing and storing of Naturaline and by-products of natural gasoline. The Naturaline Company will have as its purpose the sale of Naturaline (both domestic and export) but is organized to promote and distribute other valuable by-products of natural gasoline that its research department gives promise of developing.



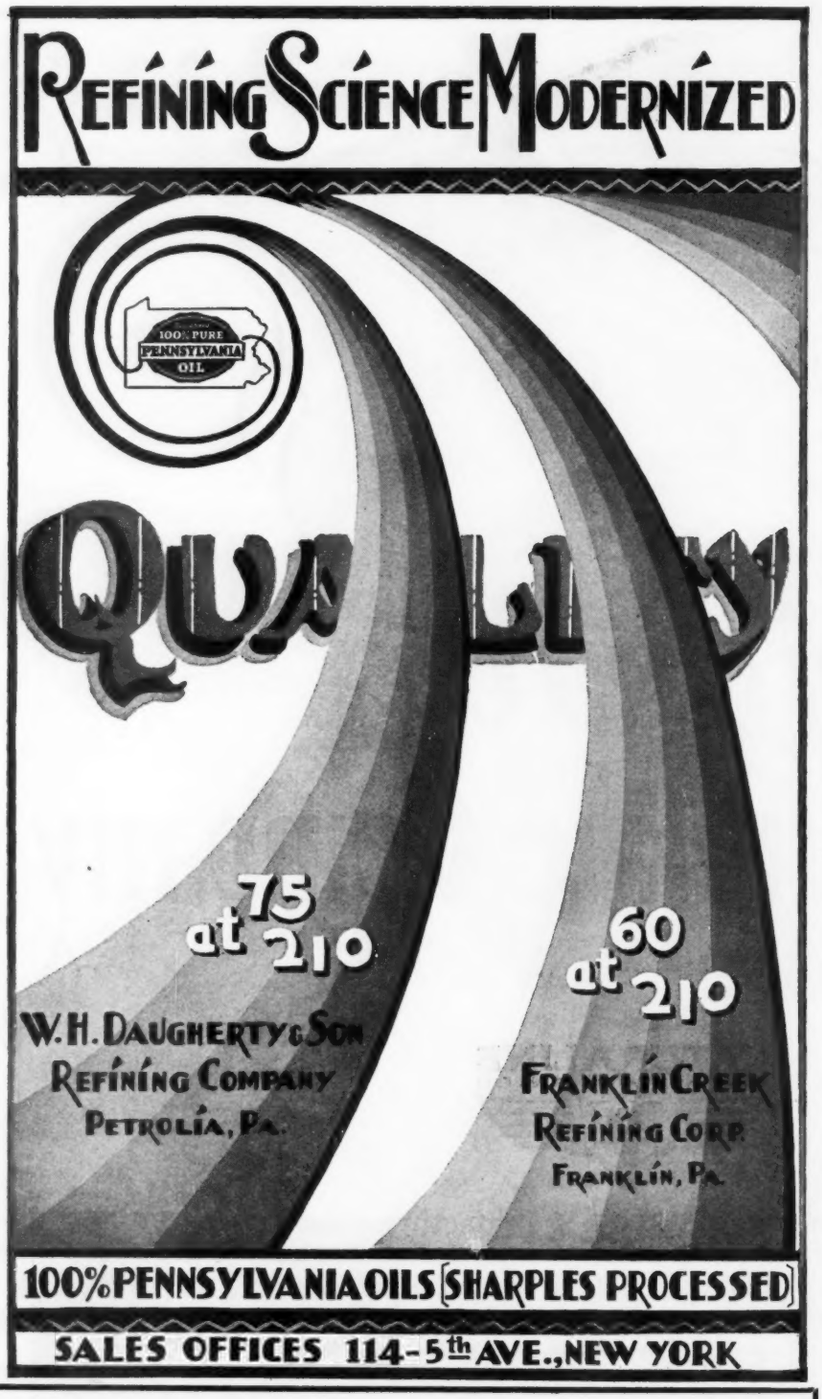
Announce

The Naturaline Company OF AMERICA

NATURALINE
A SUPER AVIATION MOTOR FUEL

The above group of natural gasoline manufacturers have generously pooled their research and development activities in this one company dedicated to the purpose of developing by-products of natural gasoline and market outlets. It has become a matter of increasing importance to the industry that the full and hidden values of natural gasoline be uncovered and released for a greater and more economical service than heretofore. We confidently expect that under the name of the new company and after the stage of experiment is passed to be able to announce some valuable companion products to Naturaline.

Naturaline is a non-corrosive, even-burning, quick-starting aviation motor fuel one half pound per gallon lighter than U. S. domestic grade aviation gasoline. It will now be sold under The Naturaline Company of America.


REFINING SCIENCE MODERNIZED
100% PURE PENNSYLVANIA OIL
QUALITY
75 at 210
W. H. DAUGHERTY & SON REFINING COMPANY PETROLIA, PA.
60 at 210
FRANKLIN CREEK REFINING CORP. FRANKLIN, PA.
100% PENNSYLVANIA OILS SHARPLES PROCESSED
SALES OFFICES 114-5th AVE., NEW YORK

Draw New Customers from Far and Near

ALLISON COUPON BOOKS

Accurate—Compact—Convenient

Motorists go out of their way to find a filling station with Allison Coupon Books. They appreciate their convenience and simplicity. And filling stations find them absolutely accurate. Furnished in stock or special designs. *Send for samples and prices.*

Allison Coupon Company

Indianapolis, Indiana

Coupon Book Specialists Since 1888

Emergency equipment for other functions of the station consists of hand cranks for all gasoline pumps, eight 30-gallon lube tanks with hand pumps, four hand grease guns and the usual tools.

All islands and the grease house are connected to the main building by concrete tunnels to facilitate the inspection of lube lines, heating lines and part of the water and air lines. In addition to a hot water system and heating system for winter, the station is equipped with electric refrigeration connected with a drinking fountain.

The station organization consists of a station manager, two men for each driveway, one man in charge of the grease department with two negroes at the pits. Uniforms of the salesmen consist of black shoes, white herringbone twill trousers, a black belt, white broadcloth shirt with the Diamond chevron sewed above the left pocket, a black bow tie and a black and white cap with removable white top.

New Stations Building

Willard, O.—Roxana Petroleum Corp., filling station.

Ocean City, N. J.—Atlantic Refining Co., filling station.

Hammonton, N. J.—Standard Oil Co. of New Jersey, filling station.

Lyndhurst, N. J.—The Texas Co., filling station.

Palmetto, Fla.—The Sun Oil Co., filling station.

Madill, Okla.—Paul Reid, filling station.

Elkhart, Ind.—Abshire Oil Co., Goshen, filling station.

Delphos, O.—Roxana Petroleum Corp., filling station.

Mellen, Mich.—Peoples Oil Co., of Ashland, filling station.

Baraboo, Wis.—Gem City Oil Co., filling station.

Cadott, Wis.—Golden Rule Oil Co., filling station.

Minneapolis, Minn.—N. S. Haagner, filling station.

Minneapolis, Minn.—H. J. Ostdiek, filling station.

Dayton, O.—Herbert H. Low, filling station.

Junction City, Wis.—Paul Kitowski, filling station.

Madison, Wis.—Madison Trackage Oil Co., filling station.

Ladysmith, Wis.—Ervin True, filling station.

Manistique, Mich.—Cloverland Oil Co., filling station.

Bisbee, N. D.—Frank Geisen, filling station.

Iron City, O.—Parks-Klay Co., filling station.

Leipsic, O.—C. J. Ericson, filling station.

Cincinnati, O.—Refiners Oil Co., filling station.

Butler, Mo.—W. W. Trail, filling station.

Rush City, Minn.—C. E. Heinberger, filling station.

Carrington, N. D.—Farmers Union Co-operative Oil Co., bulk stations at Carrington, Wimbledon and Jamestown.

Minneapolis, Minn.—Wallace G. Mowry, filling station.

Versailles, Mo.—Pierce Petroleum Corp., filling station.

Madison, Wis.—Carl B. Fritz, filling station.

Neosho, Mo.—Pierce Petroleum Co., filling station.

Rochester, N. Y.—Charles Peckens, filling station.

LaGrange, Mo.—Armould Oil Co., filling station.

Lebanon, Mo.—Pierce Petroleum Corp., filling station.

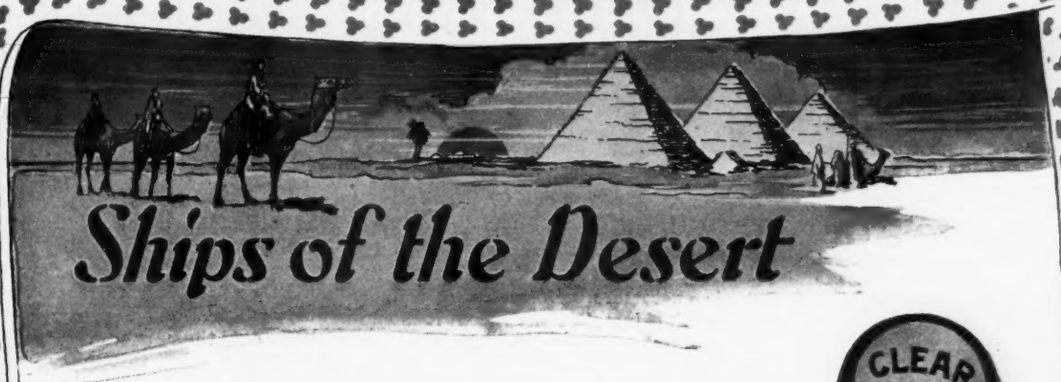
Palmyra, Mo.—Guy White and Milton Keller, filling station.

Fayette, Ia.—Oelwein Shell Gasoline Co., filling station.

O'Neill, Neb.—The Texas Co., filling station.

Laurelville, O.—Circleville Oil Co., filling station.

Tuckahoe, N. Y.—Daniel J. Meyer, filling station.



Ships of the Desert

CARRYING the world's commerce to civilization's outposts for centuries past—yet soon to become but a dim memory; for even on the far deserts American ingenuity is conquering time and space. Recently an American tractor, with a train of carts carrying 30 tons—equal to that carried by the largest of the caravans, crossed the desert in 2 short weeks—the same trip the caravans cover in 3 months. And at what a difference in "cost per ton-mile!"

Trouble-Free

In the tractor, American engineering genius has built a mechanical beast of burden that is remarkably trouble-free, performing its daily tasks with almost no delays for adjustments or repairs. So too, with Clear Vision Pumps. In these sturdy pumps, unequalled in daily gallonage delivered, Clear Vision Engineers have built a mechanism of almost watch-like precision. With thousands in use, there is seldom a call for repairs. Year after year, Clear Vision Pumps are helping greatly to build bigger and more profitable filling stations.

May we send you full information about our new "200-Series", the "Rolls-Royce" of the pump industry? A post-card request will do. Send it in today.

This beautiful station of the White Rock Oil Company is at 16th & N. Sts., Lincoln, Neb. —one block from the center of town. It is equipped with 6—200-Series Clear Vision Pumps. On the opening day, the station sold 8,386½ gallons of gasoline. Many months after it was built, it sold for $40,000, and it has been a big paying investment ever since. The Clear Vision Pumps have never faltered, even under the highest loads, and have been a big factor in the station's success.

THE CLEAR VISION PUMP COMPANY

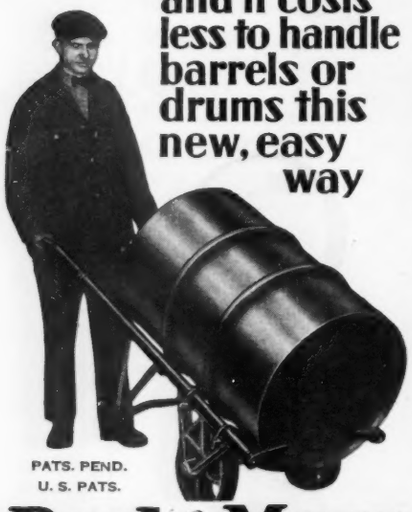
Wichita, Kansas

Pacific Coast Factory: 1165 W. Ocean Ave., Long Beach, Calif. Phone 668-345.
Tulsa Branch: 821 E. First Place, Phone 4-5009.
Kansas City: 1313 McGee St., Phone Victor 2606.

CLEAR VISION

So Much SAFER

and it costs less to handle barrels or drums this new, easy way



PATS. PEND.
U. S. PATS.

Barl Movr

The truck with a twist of the handles

HANDLING barrels and drums, an awkward task by hand, has been turned into a simple job with the Barl Movr. Just wheel the Barl Movr right up to the drum, slip the adjustable hook over the chime, and pull back on the handles. The twist of the handles swings conveying toes under the drum, holding it firmly for trucking.

Barl Movr eliminates the danger of rolling drums, which often get out of control, causing breakage or injury. This extra factor of safety is coupled with a tremendous saving in time, because one man with a Barl Movr can wheel more drums than two men can roll by hand.

Barl Movr is a sturdy all-metal truck, curved to hold any drum or bilged barrel, large or small.

Barl Movrs are sold only where they can show a saving. Write for details of special free-test, to be made in your own plant. No obligation. Just pin coupon to your letterhead.

Des Moines Foundry and Machine Company
Des Moines, Iowa

Make This Free Test in Your Own Plant

Des Moines Foundry & Mach. Co.,
Dept. J-18, Des Moines, Iowa.

We want to find out how Barl Movr will help us make drum-handling quicker and safer. Please send complete information on your free-test plan.

Firm Name_____

Street No. _____

City_____ State_____

Cleaning Fuel Oil Tanks is in Order During Hot Months

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, July 14

FUEL OIL jobbers in Chicago are busy these hot, July days cleaning out storage tanks for their customers. Domestic as well as industrial installations need it sometimes unless they are burning an overhead product.

Several of the more popular brands of domestic oil burners have been running satisfactorily on 28-30 fuel for two or three years now, and that is not an overhead product. Some of it is not even straight reduced and that means it may run around 2 per cent B. S.

As long as the burners will take the product and deliver heat in return, with uninterrupted operation, the householder is usually satisfied because 28-30 fuel is cheaper than furnace oil and he feels that he has a bargain.

But the user of heavy fuel oil in an automatic burner has a hazard that he knows not of, and it is this risk that oil men in Chicago are trying to overcome "during the hay season." In brief here is why every householder needs his tank examined and, if it is dirty, cleaned out:

A great many consumers whose heat requirements are big enough to let them out of the light distillate class, have been experimenting with oil heating for several years.

They have probably tried several kinds of oil and they may have tried several kinds of burners. But they are still using the same old tank they started with, especially if they were wise enough in the beginning to install a big tank—and quite a few were.

All these years those various fuel oils from various crudes have been leaving something in that tank. It has settled down below the drain pipe and has not given any trouble, but the longer the tank remains in use the surer the trouble is to come. Finally the sediment will fill the space in the "sump" and reach the level of the drain pipe.

Then the B. S. starts getting into the pipe and out into the burning system. If the strainers in the line arrest it, the muck soon clogs them and stops the oil from flowing.

If the strainers fail to catch it, the sediment gets into the delicate parts of the burner (never meant to dispose of semi-solids) and burner trouble begins. Unfortunately this usually happens soon after the first fill of autumn and the customer starts kicking about 10 o'clock on the evening of the first freeze.

Summer is the time to forestall this difficulty, the oil men say. During July, August and September they will clean out their customers' tanks and fill them. In this way every oil burner in the city might be made ready to do its duty on a minute's notice.

If that could be done, in reality, the first cold days of winter would not bring about a scramble for service among the fuel oil users and would not throw a panic into the truck crew of every fuel oil jobber. But the truth is that less than 75 per cent of all fuel oil users can be persuaded to buy oil until they feel the need of it.

Cleaning a storage tank is not a difficult job. It takes one man about 45 minutes to do the work with the aid of a truck equipped with a power loader and unloader. The actual mechanical washing job is done by power from the truck motor.

Fuel oil users in Chicago are being advised now of the probable need of having their tanks cleaned. Some of the companies notify their customers by telephone, carefully selecting a list of those whose tanks are likely to need cleaning. Some are doing it by personal solicitation. Others use direct mail advertising methods to get the same result.

However, when a fuel oil user notifies his oil man to come and clean his tank, the usual practice is to answer that the tank will be cleaned at the time of the first fill, provided it is not too late in the fall, after the rush of business begins. Incidentally, the oil man tells his customer that oil is cheaper now than it is likely to be later in the season.

A large majority of customers with big tanks appreciate this constructive piece of merchandising. They have been told before that a full tank is a safer thing to have around the house than an empty one, because vapors are more likely to ignite than liquids. They have been told before that buried tanks are safer full than empty because empty tanks float (even under ground) in wet weather, and are likely to lift up and twist themselves loose from their pipe connections.

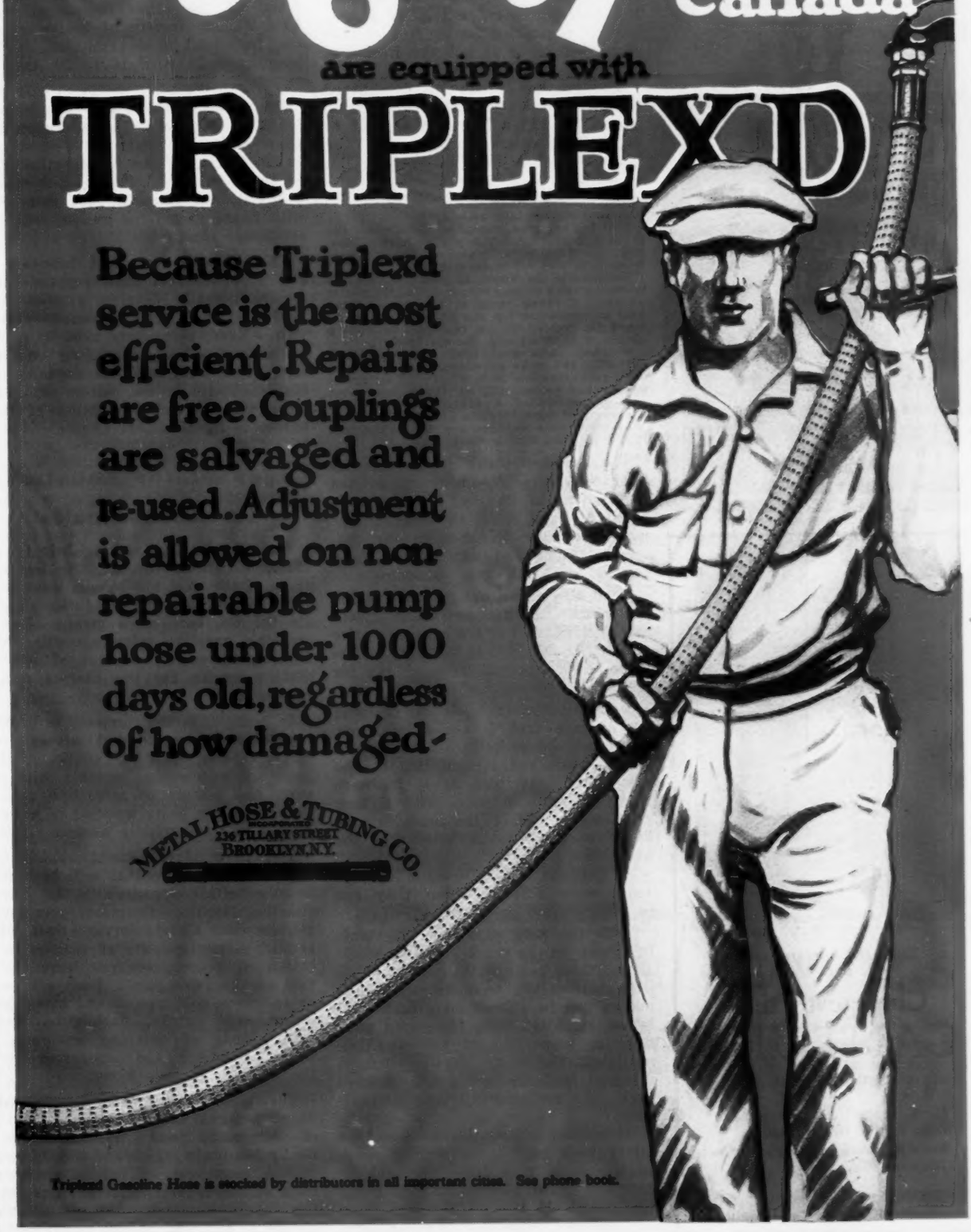
In addition to all this, they can see that by taking advantage of a ½-cent seasonal reduction in price they can save $5 on one fill of a 1000-gallon tank. And, inasmuch as they are

Why 6 out of every 7 pumps in the U.S. & Canada

are equipped with

TRIPLEXD

Because Triplexd service is the most efficient. Repairs are free. Couplings are salvaged and re-used. Adjustment is allowed on non-repairable pump hose under 1000 days old, regardless of how damaged-



METAL HOSE & TUBING CO.
INCORPORATED
136 TILLARY STREET
BROOKLYN, N.Y.

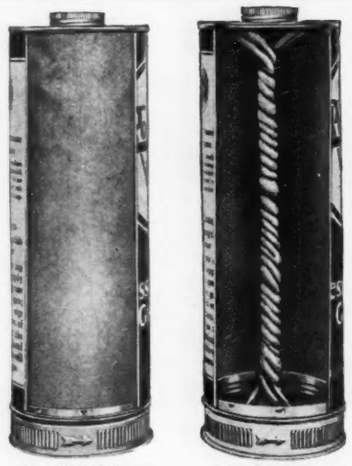
Triplexd Gasoline Hose is stocked by distributors in all important cities. See phone book.

En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio



The CANTUBE full

The CANTUBE empty

Turn the bottom and out it comes!

Change to the CANTUBE

way of marketing your grease. It'll pay!

The Cantube is now being made in sizes up to three pounds.

Write for literature and samples today—NOW.

NATIONAL CANTUBE CO., Inc.
1330 Halsted St. Chicago, Illinois

about to get their oil tank washed free, they order the summer fill of oil. As a rule they are quite liberal, instructing the oil man to come at his own convenience to do the work.

Shaffer Oil & Refining Co., and other leaders in the domestic oil fuel business in Chicago, do the cleaning job free for regular customers. But they make a charge of $3.50 an hour for the truck and one man provided the customer is not a regular patron, has not contracted for his full winter's requirements or is not the holder of a furnace oil coupon book.

The plan on which the established companies conduct their cleaning work is well told in a letter mailed out to regular customers and prospects by the Lynch-Clarisey Co. on June 11. It said:

Fuel Oil Customer:

Is your storage tank clean?

If it has not been cleaned within the last two or three years, we advise you to have it done now, unless you burn furnace oil, in which case it probably will not be necessary.

Sediment in the bottom of your tank is liable to cause trouble in your burner during the winter months. Cleaning tanks at that time of the year is unpleasant for you and due to the demand for fuel oil we are compelled to make a charge of $3.50 an hour for our truck.

We will clean your tank now WITHOUT CHARGE and make an allowance for your old oil if you will allow us to fill it with oil at the low summer prices. Fill out the enclosed form and be assured of a winter free from the annoyance of burner trouble due to a dirty tank.

By filling your tank you are also assured that it will not float during the rains.

The inclosed blank for return information is a document of written permission to the oil company to pump out and re-fill the tank of the man who signs it. Besides the customer's name and address the form carries the following information:

"You may pump out my tank which has about.....gallons of.....oil, and refill it at the low summer price on.....(date). It is understood that there will be no charge for the pump out service."

Mechanically, the job of cleaning the average tank is not a hard one. The truck driver halts his tank truck at the curb and lays a line to the customer's tank just as if he were going to make a fill. With a long pipe on the end of the hose he runs his line clear to the bottom of the tank through the fill pipe; if the fill pipe happens to be crooked it presents more difficulties but they can be overcome with time and effort.

With the long pipe into the tank, the pump on the truck is put to work. If the tank has a little residue of oil in it besides the sediment, the heavy matter can be stirred up with the oil by an air blast from the pump until it is in suspension in the oil. Immediately the pump on the truck is reversed and the dirty oil pumped back into an empty truck compartment.

Of course, before this is done, the driver took pains to close the valve on the drain pipe from the tank to keep the agitated sediment from going that way. If the oil removed from the tank is especially dark and viscous the truck driver gives the inside of the tank a bath with clean oil. This is done by shooting a few gallons of clean gas oil into it under pressure and pumping it out again.

Dirty oil from the consumer's tank is taken back to the oil man's plant. The Lynch-Clarisey Co., uses it under their own boiler in their own plant, never offering it for sale again. Some of the other companies who have a wide variety of customers in the industrial trade can sell it by lumping it in with 10 to 20 gravity material.

The householders are reimbursed for the dirty oil. Some companies allow them as much as 5 cents a gallon for it, off the bill for the first fill in the fall. Other companies make a practice of replacing the dirty oil with clean, gallon for gallon, without additional charge.

The oil men say that between 5 and 8 per cent of their regular customers actually develop a need for having their tanks cleaned every year. Some consumers need it more often than others, depending on the kind of oil they use, the capacity of the idle space in the bottom of their storage tanks and the ability of the burner to handle slush.

Urges Motor Vacations To Increase Sales

BARTLESVILLE, Okla., July 14.—Motor vacations through the beauty spots of the west and middle west are being encouraged by the Cities Service Oil Co. here as a means of increasing gasoline sales, according to Keither Clevenger, director of information service for the Empire companies here.

In doing this, the company is using newspaper space to put across its story to the motoring public. Full page advertisements, together with a story and picture of attractive vacation spots, are being inserted in newspapers in many middle western cities.

The first advertisement, which is typical of all those that will be used in other cities, appeared in the Bartlesville Morning Examiner recently. Besides the Cities Service own ad, smaller advertisements of various vacation equipment concerns were carried on the same page. Such articles as suitcases, cold creams and mosquito lotion, cold drinks, flashlights, and many kinds of camping equipment, were advertised and suggested for the motorist to take along.

The places recommended as ideal vacation spots were the lake districts of Minnesota and Wisconsin, the Rocky Mountain region and the Ozarks in the southwest. What advantages each of the regions described has for the vacationer, and what attractions it offers, are told in the story.

New Equipment

George D. Ellis & Sons, Inc., Philadelphia, has perfected a spill-proof top with inner gasket which will be a standard part of its 5 and 10 gallon side-rack cans for oil marketing. The new top is designed to fit over the neck of the can, locking or unlocking on and off a lug with a simple turn of the wrist. Some oil distributors who have already tested the can claim it dust-proof, spill-proof and convenient, according to the company.

A catalog which has just been published by the company describes and illustrates in colors Ellisco cans for the oil trade. These cans are made from sizes of 5 gallons to half pint oil and grease cans.

* * *

The Stoody Co. of Whittier, Calif., manufacturers of hard facing welding metals, steel alloys and welding equipment, have published a new handbook called "Oil Field Welding." This book, which is a new departure in the lines of both the acetylene and arc welding in the oil fields, was published with the idea of presenting a non-technical treatise on the latest methods of applying hard surfacing metals to drilling tools and to the using of the various types of welding rods on or about the drilling rigs and the machine shops of the oil companies operating throughout the world.

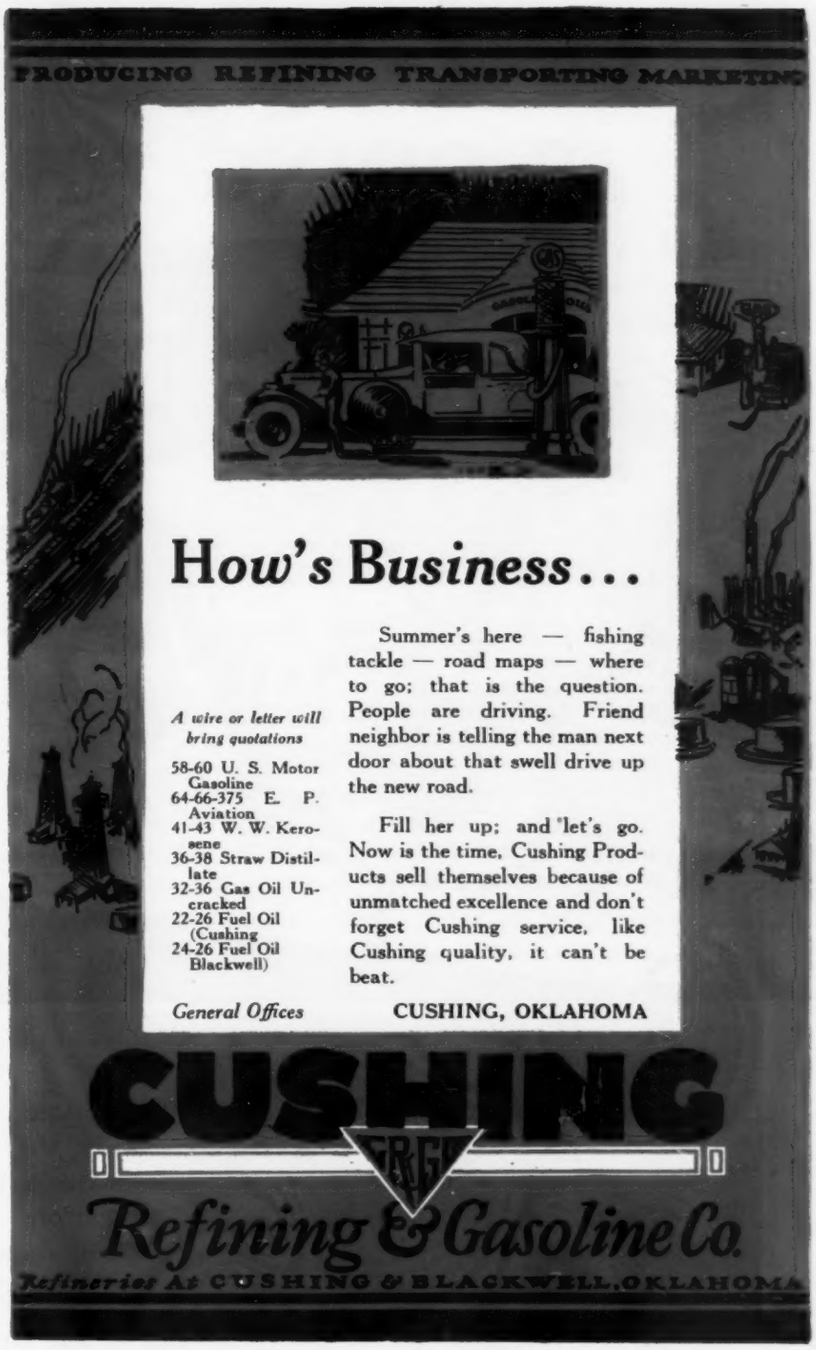
It is the desire of the Stoody Co. that all those individuals who desire this valuable 100-page book on the welding industry in the oil fields write the company at Drawer U, Whittier, California, giving their address in order that a free-pre-paid copy may be mailed to them.

* * *

The Brown Instrument Co. of Philadelphia, makers of industrial and power plant indicating, recording and automatic control instruments for measuring temperature, pressure, fluid, flow, machine speed, per cent carbon dioxide in furnace flue gases, etc., is building another addition to its plant. The new structure will be 60 feet long by 44 feet deep and two stories in height.

* * *

Truscon Steel Co., Youngstown, O., has off the press what it claims to be the first catalog to be published on such a complete line of steel doors as it is now making. Description and illustrations of the various types, together with specifications and drafting room standards, are included in the booklet. Among the types described are stock type doors and frames, industrial swing and slide type doors for large openings, vertical folding doors, vertical lift and vertical lift-swing doors, fire department doors and airplane hangar doors.


PRODUCING REFINING TRANSPORTING MARKETING
How's Business...
A wire or letter will bring quotations
58-60 U. S. Motor Gasoline
64-66-375 E. P. Aviation
41-43 W. W. Kerosene
36-38 Straw Distillate
32-36 Gas Oil Uncracked
22-26 Fuel Oil (Cushing
24-26 Fuel Oil Blackwell)
Summer's here — fishing tackle — road maps — where to go; that is the question. People are driving. Friend neighbor is telling the man next door about that swell drive up the new road.
Fill her up; and let's go. Now is the time, Cushing Products sell themselves because of unmatched excellence and don't forget Cushing service, like Cushing quality, it can't be beat.
General Offices
CUSHING, OKLAHOMA
CUSHING
Refining & Gasoline Co.
Refineries At CUSHING & BLACKWELL, OKLAHOMA

CHANGE OIL STICKERS

WIN good will and build big repeat business for quality oil. Every service station should use them. We create individual designs and supply stickers in any quantity from 1000 to 1,000,000 or more. For a nominal charge, distributors can furnish their retailers with stickers bearing imprint of retailer's name and address.

Write for quotation and samples.

ST. LOUIS STICKER COMPANY
1633 Washington Ave. . . . . St. Louis Mo.

MARLAND
IS GOING AHEAD!

In the ever changing conditions . . . . crude prices are now down . . . . now up . . . . over production here . . . . shortage there . . . . markets bullish or markets bearish . . . . first one thing then another, even including a Presidential year, Marland is always forging ahead.

And for mighty sound reasons.

A refinery second to none in America. Ample sources of choice crude. Finished products that rank in the first line of American motor fuels and lubricants. Loyal Distributors, building substantial, profitable businesses under the banner of the Red Triangle.

Let us tell you more about this winning combination. Let our nearest sales office give you interesting facts about building sales with Marland Trade Marked Products. Write or wire.

MARLAND OILS

MARLAND REFINING COMPANY

General Offices and Refinery—Ponca City, Okla.

Division Sales Offices: New York, Boston, Chicago, Kansas City, Denver, Memphis, St. Paul-Minneapolis, Ft. Worth. *Export Terminal,* Texas City, Texas.

Shipping Board OKs Gulf's Low Bids

WASHINGTON, July 16.—All the low bids of the Gulf Refining Co. to furnish bunker oil for the ships of the Shipping Board's Merchant Fleet Corp. have been accepted for deliveries at New York, Philadelphia, New Orleans, Galveston and Port Arthur in the three-year period beginning Jan. 1. All other bids were rejected.

Believing that lower bids for supplying ships at Charleston, Jacksonville, Tampa and Boston are possible, the board has directed its purchasing department to invite other tenders. The purchasing department is jubilant over what it has accomplished thus far. The requirements at the ports for which no contracts were made are relatively small.

The contract does not bind the governmental agency to take oil for the three-year period. It merely authorizes it to exercise an option to call on the Gulf to furnish bunker oil in that period at prices not in excess of those mentioned. In other words, the Gulf stakes its reputation as a prophet and its money as a solvent concern that in the three-year period the market will not go above the figures mentioned enough, if any, to make the engagement it has made, financially uncomfortable.

The contract with the Gulf Refining Co. will be made on the following basis:

New York and Philadelphia for the three-year period, an average price of 92 cents per barrel, terminal delivery, and 97 cents per barrel, barge delivery.

New Orleans for the three-year period, an average fixed price of 86 cents per barrel, terminal delivery, and 91 cents per barrel, barge delivery.

Galveston for the three-year period, an average fixed price of 89 cents per barrel, terminal delivery, and 94 cents per barrel, barge delivery.

Port Arthur for the three-year period, an average fixed price of 84.33 cents per barrel, terminal delivery, and 89.33 cents per barrel, barge delivery.

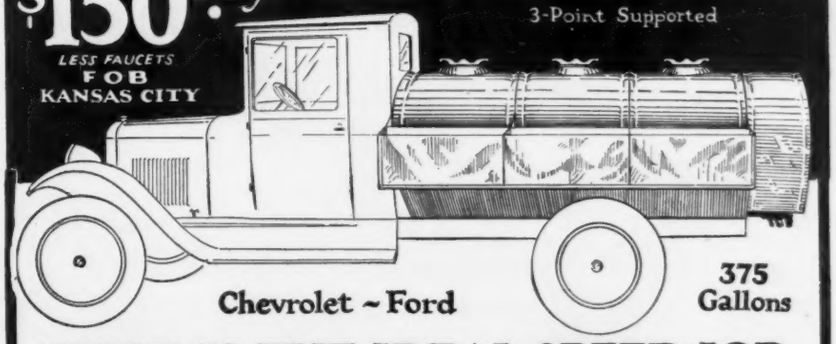
The fleet corporation was also authorized to close with the Gulf Refining Co. for its cargo requirements, which cover oil for its own bunkering stations, at a price of 79.33 cents per barrel, at Port Arthur.

LOS ANGELES, July 14.—Buck Motor Lubricants Co., manufacturer of Dura-Lube gear compound, has moved into a larger plant at 2460 Enterprise st. here. The company also sells motor and Aero oils, according to J. H. Buckmeyer, proprietor.

$150.00 for this Convertible TRUCK TANK

3-Point Supported

LESS FAUCETS F.O.B. KANSAS CITY



Chevrolet ~ Ford

375 Gallons

HERE IS THE IDEAL SPEED JOB

DESIGNED for any of the popular light or medium truck chassis. Convertible feature makes it adaptable to varying road, weather and seasonal trade conditions. For instance, side can racks may be completely detached when not in demand or when bad going makes extreme lightness imperative. Or, sections of side racks may be replaced by our horizontal lube tanks rear, or barrel carrier forward, holding a full sized barrel in upright position. Any of these conversions may be accomplished in the space of one hour by our special combination fittings.

The above price includes side can racks, but less faucets, f.o.b. Kansas City. Faucets, side lube tanks and barrel carriers, extra.

COLUMBIAN STEEL TANK COMPANY

KANSAS CITY — *Partition mounting reduces weight and lowers tank.*

COLUMBIAN Partition Mounted 3 Point Supported TRUCK TANK

MISSOURI — *3 point support solves torque and vibration problem.*

STANDARD TANKS

Quality—For Over a Score of Years

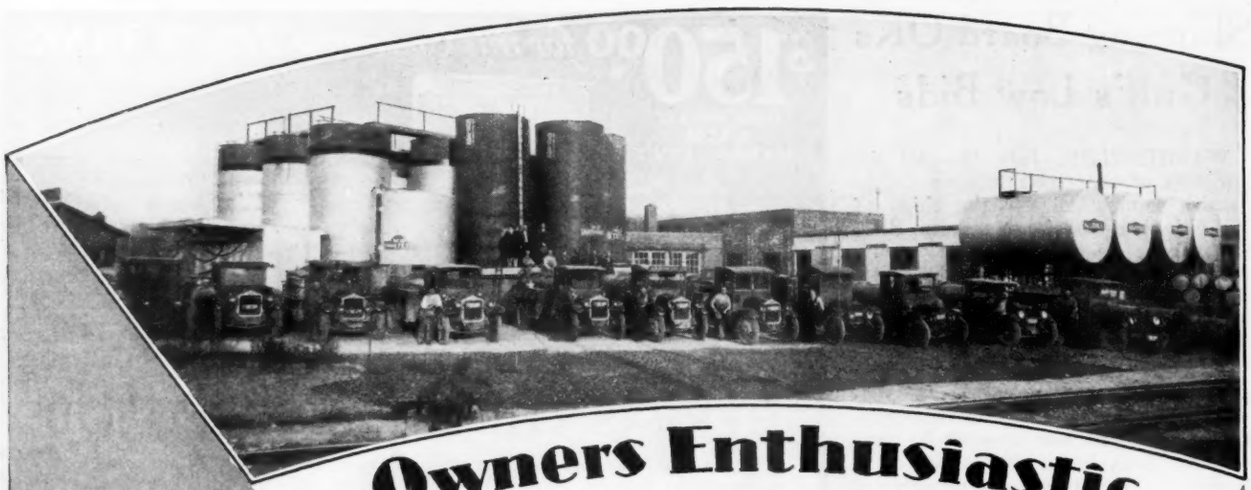
DOWN in the valley of steel, Standard Tanks are made. Surrounding us on all sides are the colossal furnaces, the ore mountains and powerful mills where steel is in the making.

For over a score of years Standard Tanks have been fabricated within sight of the very ore piles that have supplied the steel. It naturally follows that Standard makes good tanks—leak-proof tanks—and tanks at a fair price.

"Built to a Reputation"

THE STANDARD BOILER & PLATE IRON CO.

Niles—Ohio



Owners Enthusiastic In Praise of WELDCO Truck Tanks

Here is a typical example—multiplied the country over—of enthusiasm and praise voiced by owners of WELDCO Truck Tanks, with the exclusive *Funnel Drain* feature. Read this letter and then tell us your requirements.

WELDCO
DRAINS LIKE A FUNNEL
TRUCK TANKS
TRADE MARK REG. U.S. PAT. OFF.

THE ARROW OIL COMPANY
PRODUCERS OF MOTOR ESSENCE
BENZOLGAS
GASOLINE KEROSENE BENZOL ALCOHOL OILS AND GREASES

WOOSTER, OHIO,
May 21, 1928.

Youngstown Welding Company
Youngstown, Ohio

Attention: Mr. C. G. Watson

Gentlemen:-

We are sending you under separate cover a picture of our Wooster Plant together with the tank trucks. Inasmuch as the tanks were furnished by your good company, we are very pleased to say that we have standardized on this truck tank and have used no other during the past five years.

In many hundred of thousands of miles which our trucks have traveled during this time, over all kinds of roads, we have never had a minutes trouble with your tanks. We take this opportunity to congratulate you on the high class construction and finished workmanship of your truck tanks.

Yours very truly,

THE ARROW OIL COMPANY

RKB:C

The Youngstown Welding Company
Welders Since 1912
Youngstown, Ohio

Compilation Of Mid-Continent Refinery Operations

All Rights Reserved to National Petroleum Publishing Co.

National Petroleum News

Mid-Continent Refinery Operations Week Ended July 13 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended July 13	Total Week Ended June 15
Plants Reporting	12	28	28	12	80	80
Crude Capacity (bbls.)	92,000	157,200	127,600	54,900	431,700	431,700
Cracking Capacity	30,700	52,600	17,200	22,700	123,200	123,200
Da. Av. Crude Runs	67,683 + 4.5	116,380 + 14.7	100,571 + 9.4	56,281 + 4.3	340,915 + 9.2	320,023
Da. Av. Other Oils	8,676 + 0.7	4,762 + 41.5	7,091 + 9.1	810 — 5.0	21,339 + 10.4	19,326
GASOLINE—Gallons						
Stocks, July 6	13,940,000 + 7.3	37,413,000	17,570,000	2,292,000	71,215,000	78,057,000
Prod. 7-6 to 7-13	10,179,000 + 15.7	19,106,000 + 19.0	10,532,000 + 18.2	4,126,000 — 6.9	43,943,000 + 13.0	43,999,000
Ship. 7-6 to 7-13	11,815,000	22,571,000 + 22.9	10,478,000 + 9.4	4,008,000 — 20.6	48,872,000 + 13.1	41,922,000
Stocks, July 13	12,304,000 — 11.7	33,948,000 — 9.3	17,624,000 + 0.3	2,410,000 + 5.1	66,286,000 — 6.9	80,134,000
Ratio Sales to Prod.	116.1%	118.1%	99.5%	97.1%	111.2%	95.3%
KEROSENE—Gallons						
Stocks, July 6	6,659,000	5,874,000	1,613,000	1,016,000	15,162,000	12,337,000
Prod. 7-6 to 7-13	2,259,000 — 0.7	2,602,000 + 21.1	1,491,000 + 2.5	333,000 — 14.4	6,685,000 + 6.7	6,465,000
Ship. 7-6 to 7-13	2,156,000 + 0.7	3,249,000 + 56.1	1,506,000 + 8.3	782,000 +293.0	7,693,000 + 32.4	5,063,000
Stocks, July 13	6,762,000 + 1.5	5,227,000 — 11.0	1,698,000 — 0.9	567,000 — 44.2	14,154,000 — 6.6	13,739,000
Ratio Sales to Prod.	95.4%	124.9%	101.1%	234.8%	115.1%	78.3%
STOVE DISTILLATE—Gallons						
Stocks, July 6	2,066,000	2,269,000	404,000	50,000	4,789,000	4,473,000
Prod. 7-6 to 7-13	289,000 — 4.6	365,000 + 9.1	87,000 + 11.5	93,000 + 43.1	834,000 + 30.7	1,048,000
Ship. 7-6 to 7-13	175,000 +133.3	300,000 + 7.9	105,000 — 45.9	85,000 + 3.7	665,000 + 5.7	845,000
Stocks, July 13	2,180,000 + 5.5	2,334,000 + 2.9	386,000 — 4.5	58,000 + 16.0	4,958,000 + 3.5	4,476,000
Ratio Sales to Prod.	60.6%	82.2%	120.7%	91.4%	79.7%	80.6%
GAS OIL—Gallons						
Stocks, July 6	8,493,000	37,403,000	1,809,000	5,700,000	53,405,000	50,563,000
Prod. 7-6 to 7-13	2,162,000 + 43.1	1,277,000	1,425,000 — 5.8	2,387,000 + 19.1	7,251,000 + 45.5	7,488,000
Ship. 7-6 to 7-13	2,006,000 — 0.9	1,389,000 — 11.6	941,000 — 45.1	2,515,000 + 9.8	6,851,000 — 9.8	4,185,000
Stocks, July 13	8,649,000 + 1.8	37,291,000 — 0.3	2,293,000 + 26.8	5,572,000 — 2.2	53,805,000 + 0.7	53,866,000
Ratio Sales to Prod.	92.8%	108.8%	66.0%	105.4%	94.5%	55.9%
FUEL OIL—Gallons						
Stocks, July 6	20,012,000	49,966,000	55,073,000	19,389,000	144,440,000	125,144,000
Prod. 7-6 to 7-13	7,270,000 + 1.7	9,908,000 + 18.6	15,488,000 + 10.9	8,479,000 + 7.0	41,145,000 +10.0	35,466,000
Ship. 7-6 to 7-13	7,484,000 + 11.4	8,097,000 + 39.7	16,716,000 + 51.5	8,995,000 + 25.4	41,392,000 +34.4	36,204,000
Stocks, July 13	19,798,000 — 1.1	51,677,000 + 3.4	53,845,000 — 2.2	18,873,000 — 2.7	144,193,000 — 0.2	124,406,000
Ratio Sales to Prod.	102.9%	82.7%	107.9%	106.1%	100.6%	102.1%

Gasoline Produced by Various Methods, Week Ended July 13

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,533,000	64.2	13,141,000	68.8	8,563,000	81.3	1,872,000	45.4	30,109,000	68.5
Cracked	2,944,000	28.9	4,678,000	24.5	1,583,000	15.0	1,471,000	35.6	10,676,000	24.3
Natural	702,000	6.9	1,287,000	6.7	386,000	3.7	783,000	19.0	3,158,000	7.2
Total	10,179,000		19,106,000		10,532,000		4,126,000		43,943,000	

+ or — columns are % change from previous week.

Western Gasoline Stocks Down to 10 Days' Supply

Staff Special—By Telegraph
TULSA, July 17

NEW high records for crude charges to stills, total gasoline shipments and total fuel oil shipments were set during the week ended July 13 by 80 Mid-Continent refiners reporting weekly operations to NATIONAL PETROLEUM NEWS.

Crude charges to stills were 340,915 barrels daily average. This is approximately 7,000 barrels above the previous high mark of 333,915 barrels for the week ended June 22. The increase in charges over the week ended July 6 was 28,781 barrels or 9.2 per cent.

Kansas refiners increased crude runs 4.5 per cent while the Oklahoma refiners boosted runs 14.7 per cent and the Texas refiners had an increase of 9.4 per cent. The Arkansas-Louisiana refiners showed an

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended July 13. Change in stocks figured from June 15.

GASOLINE

	Gallons
Production	168,614,000
Shipments	182,462,000
Net change in stocks	—13,848,000
Ratio sales to production	108.2%

KEROSENE

	Gallons
Production	25,670,000
Shipments	25,255,000
Net change in stocks	+415,000
Ratio sales to production	98.4%

STOVE DISTILLATE

	Gallons
Production	3,214,000
Shipments	2,932,000
Net change in stocks	+282,000
Ratio sales to production	91.2%

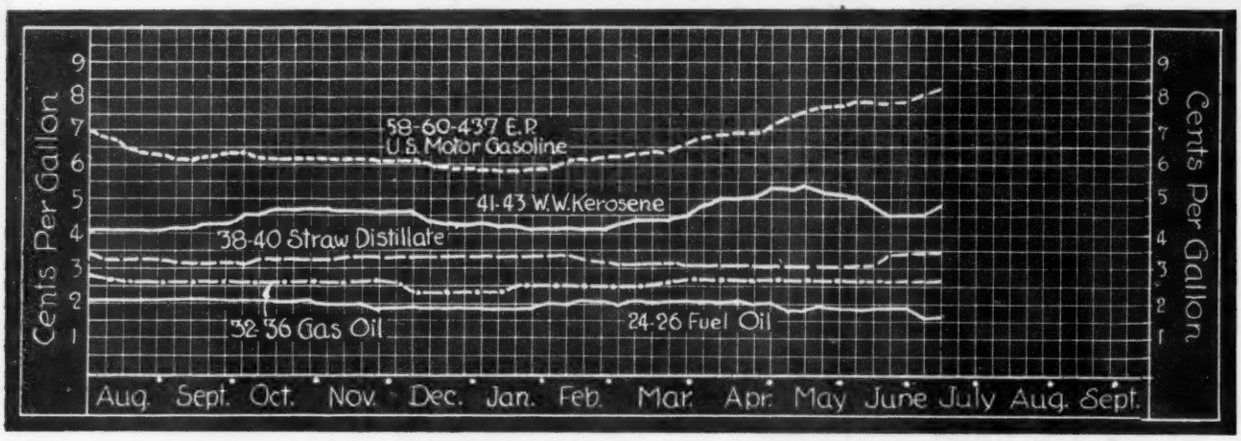
GAS OIL

	Gallons
Production	27,476,000
Shipments	27,537,000
Net change in stocks	—61,000
Ratio sales to production	100.2%

FUEL OIL

	Gallons
Production	154,625,000
Shipments	134,838,000
Net change in stocks	+19,787,000
Ratio sales to production	87.2%

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

increase of 4.3 per cent. Charges of other oils were increased in all fields except Louisiana-Arkansas.

The higher crude runs resulted in increased gasoline production in all fields except Louisiana-Arkansas where a large percentage of the gasoline produced is by cracking. Kansas refiners increased gasoline production 7.3 per cent while the Oklahoma refiners had an increase of 19 per cent. Texas refiners increased production 18.2 per cent but the Arkansas-Louisiana district reduced production 6.9 per cent. For the entire field production was increased 13 per cent.

Gasoline shipments for the week totaled 48,872,000 gallons approximately 200,000 gallons above the previous mark established for the week ended May 18.

Shipments in Kansas were 15.7 per cent heavier than for the previous week while in Oklahoma the increase was 22.9 per cent. In Texas the percentage was 9.4 while in Arkansas and Louisiana shipments fell off 20.6 per cent. Despite the increase of approximately 5,000,000 gallons in gasoline production, the heavy increase in shipments was sufficient to cause a draft on stocks of approximately 5,000,000 gallons. Stocks on hand at reporting refineries July 13 totaled 66,286,000 gallons. At the current rate of shipment this figure represents less than 10 days' supply.

Kerosene production was increased only 400,000 gallons during the week while shipments were increased 1,800,000 gallons. Stocks accordingly were reduced approximately a million gallons. Reductions were made in all fields except Kansas. The ratio of sales to production in Arkansas was 234.8. Refiners during the past week reported good demand for kerosene both for the harvesting belt and also from exporters and the stocks reduction was generally expected.

Stocks of stove distillate were increased slightly with Texas refiners the only ones to ship more than their production. Oklahoma and Louisiana-Arkansas refiners drew on gas oil stocks while the other areas showed slight increase. Stocks were increased for the field as a whole approximately 400,000 gallons.

Fuel oil production increased 10 per cent over the previous week, the total output being 41,145,000 gallons. Shipments jumped to 41,392,000 gallons which represents an increase over the week ended July 6 of 34.4 per cent. Oklahoma refiners were the only ones who failed to draw on stocks. Their production increased 1,600,000 gallons while shipments were up 2,300,000 gallons. Stocks were increased 3.4 per cent. Stocks were reduced 1.1 per cent in Kansas, 2.2 per cent in Texas and 2.7 per cent in Louisiana-Arkansas. Reduction for the field was 0.2 per cent.

Standard Oil Companies Are Jumping Fences

(*Continued from Page* 18)

competitor for motor oil business with the Vacuum Oil Co., a member of the original group.

The Ohio Oil Co. four years ago bought the Lincoln Oil Refining Co. of Robinson, Ill., which has bulk or service station markets or both in Kentucky, Indiana, Ohio, Illinois and Michigan.

In the tank car field, the Solar Refining Co., Lima, O., is competing with the Standard of Ohio and the Standard Oil Co. of Kansas, Neodesha, Kans., is competing with the Standards of Indiana, Ohio and Louisiana, and perhaps others.

The Vacuum Oil Co. was primarily a lubricating oil manufacturer until a year and a half ago. Its gasoline and kerosene production was really a by-product. Then it bought into the Metro Stations, Inc., Olean, N. Y., one of its gasoline customers and motor oil distributors, which has stations in central and western New York and northern Pennsylvania. Last year Metro opened a bulk station in Philadelphia to sell gasoline from the Vacuum's refinery at Paulsboro, N. J.

Swan-Finch Oil Corp., Buffalo, N. Y., was a lubricating oil and grease manufacturer in the old Standard group. Several years ago it bought a jobbing company in Buffalo and since has been jobbing and retailing gasoline in competition with the Standard of New York.

Galena Signal Oil Co., Franklin, Pa., under the old regime made railroad lubricants and signal oils. Through a subsidiary, the Galena Signal Oil Co., of Texas, organized in 1918, it built up gasoline distribution in Texas, Georgia and North and South Carolina. Properties of the Texas subsidiary recently were sold to The Texas Corp. and the company is no longer an active competitor in the gasoline field.

The Waters-Pierce Oil Co. was once an active Standard Oil unit in the southwestern states but after the Rockefellers sold their holdings to its successor, the Pierce Oil Corp., it was not considered a Standard Oil company.

TULSA, July 16.—The Chestnut & Smith Corp. and affiliated companies have formed a new subsidiary corporation to be known as the Naturaline Company of America.

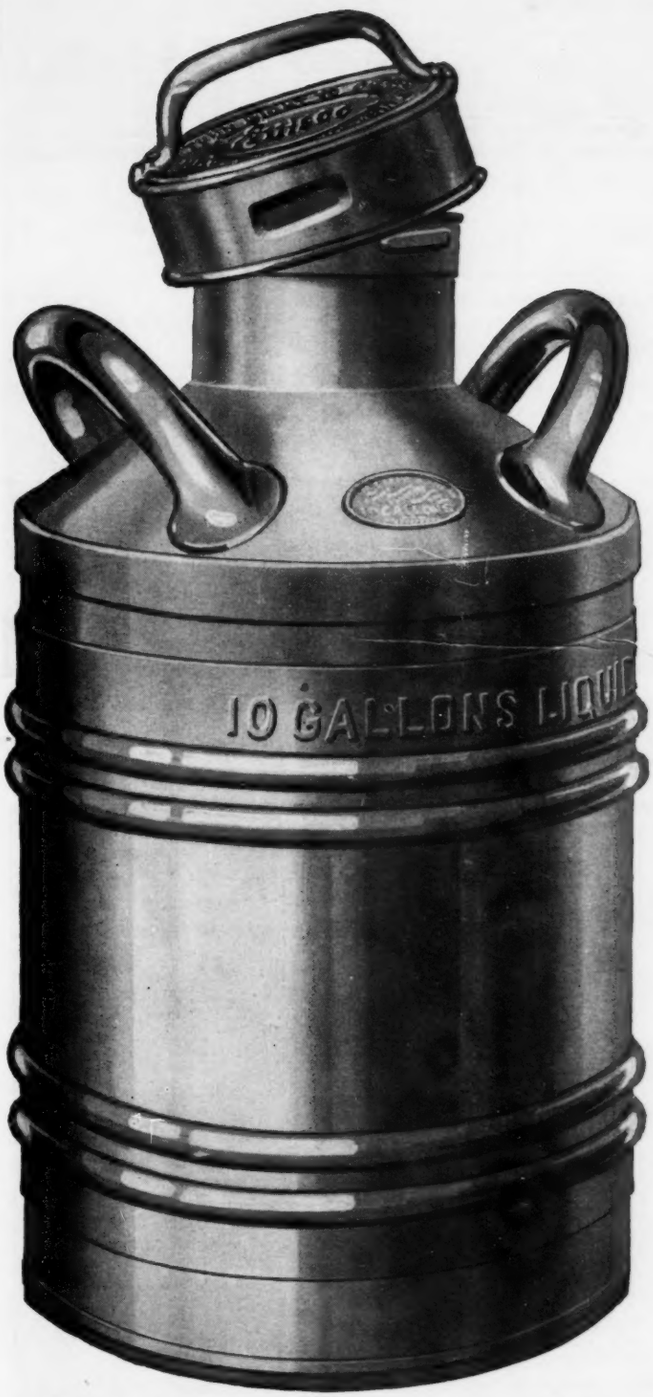
The new company will take over the manufacturing and both export and domestic sales of Naturaline for Chestnut & Smith Corp., Brooks & Hanlon, Inc., Smith-Hanlon, Inc., and the Hanlon Gasoline Co.

Having perfected their special natural gasoline fuel for airplanes over a period of years of research the company will offer "Naturaline" to the jobbing trade throughout the country for the servicing of airports.

The new company has established an export terminal at Westwego, La., with tidewater facilities to handle its export business in the new product. At the new terminal the company has installed ample facilities to manufacture Naturaline and other special products.

Oil men helped build this can

—*that's why oil men* like *it!*



THEY told us what they wanted. "A can that will stand up under rough handling"—so we built its body of 20-Gauge Steel re-inforced with a swedged jacket to provide additional resistance where the most wear comes, electrically welded throughout, making a practically solid piece of steel. And with the additional protection of two 1/8" Steel Hoops, it is giving splendid service.

"—a Can that empties *all* its contents"—so the Ellisco Side Rack Can is perfectly smooth inside. No pockets, swedges or corrugations to impede delivery of the oil, the 5" opening makes it easy to fill, empty—and clean.

"—one that won't corrode"—and we answered by coating it with pure tin inside and out so that it takes any kind of oil and will not discolor or corrode.

"—a top that goes on easily and does not leak"—so we built the new locking top that is rain and dirt proof and has an inner gasket to prevent seepage—locks securely and unlocks quickly by a simple turn of the wrist—a top that won't leak and can't be jarred off.

Managers like it because it is medium in price, and stands up and saves replacement costs. Drivers take to it because it has those conveniences that drivers like, including comfortable fitting large Tubular Side Handles.

Let us give you the facts. Ask for our catalog illustrating complete line of Tank Truck equipment.

Ellisco

REG. U.S. PAT. OFF.

SUPER-SERVICE CANS FOR THE OIL TRADE

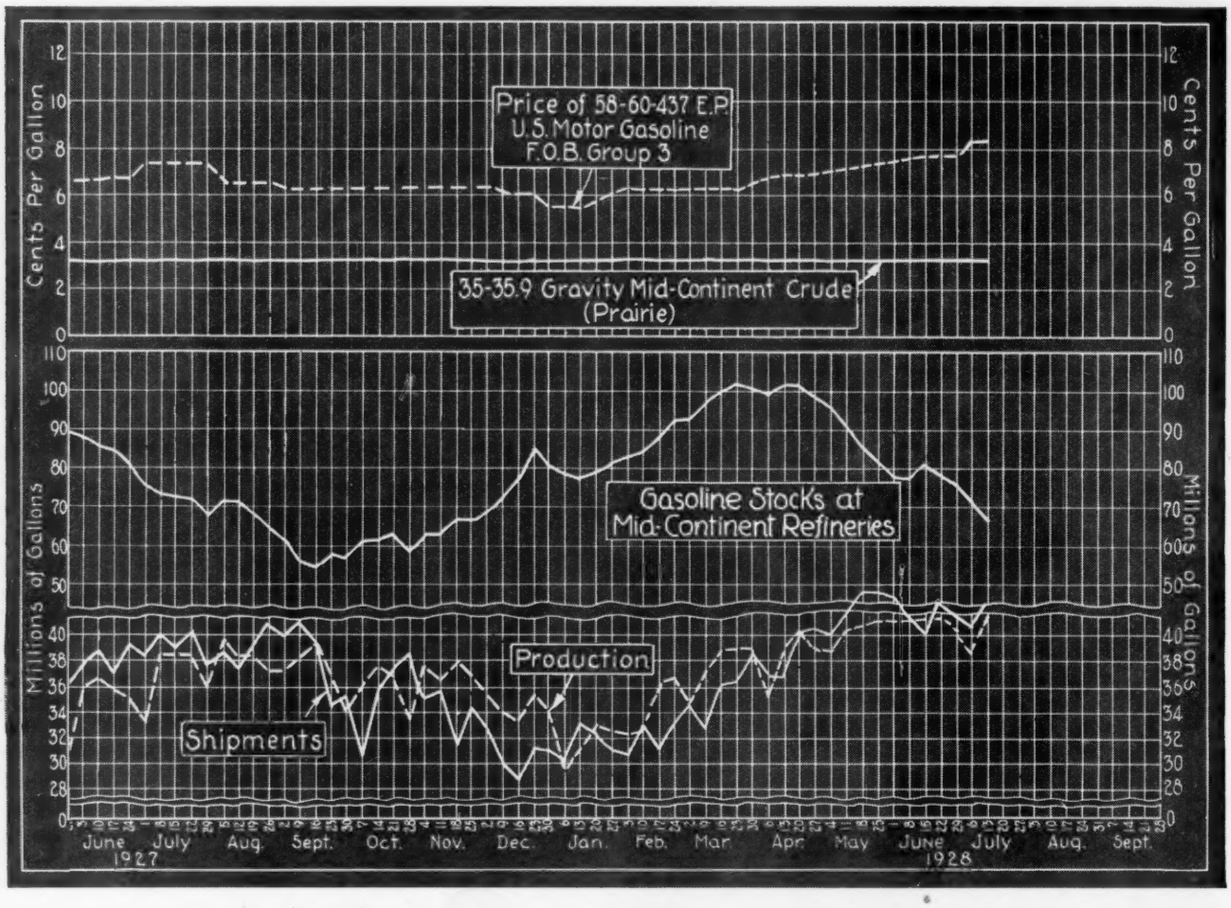
ELLISCO 5-Gallon Measuring Cans are used exclusively by many of the largest oil distributors because their re-inforced jacketed body and Tripl-Lock Bottom Seam construction enables them to take the hardest knocks and still keep on the job. Why not ask for information on these Measuring Cans too?

GEORGE D. ELLIS & SONS, INC., 220 Wood St., Philadelphia

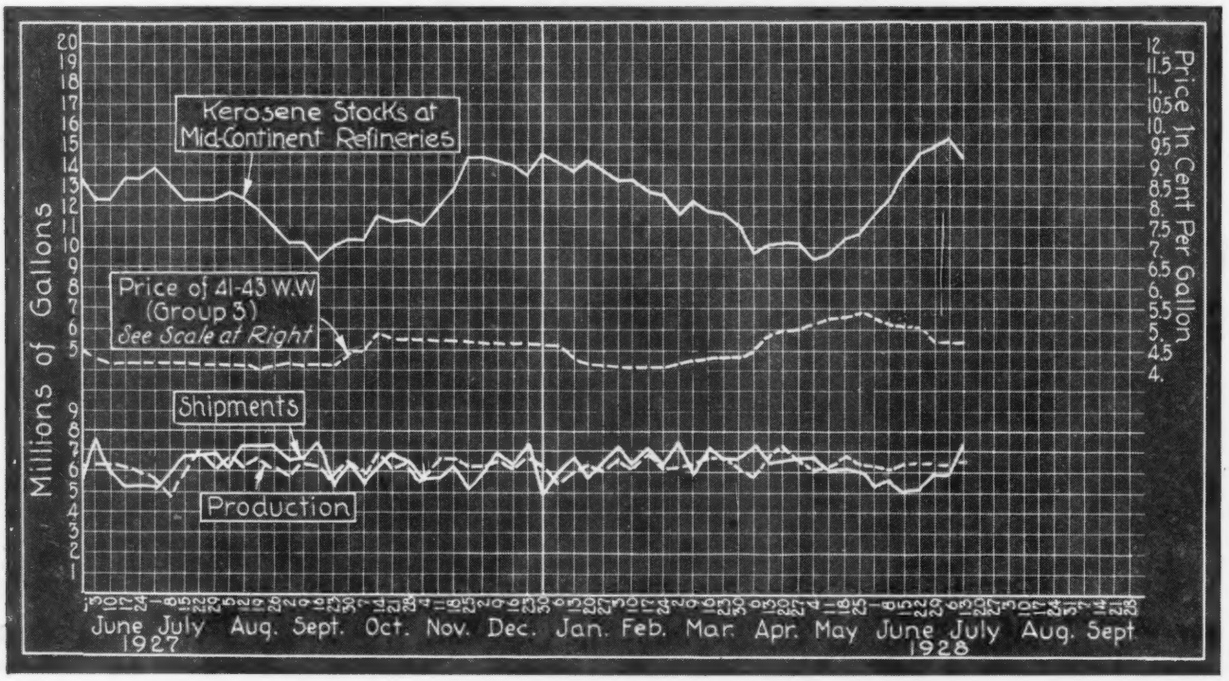
Established 1845

Barometer of Mid-Continent Refinery Market—Week Ending July 13

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 80 Plants to National Petroleum News


Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page


Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W (Group 3) See Scale at Right
Millions of Gallons
Price In Cent Per Gallon
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept
1927
1928

An extra month's profit in every year

for dealers who sell

GRAIGRENE

[PRONOUNCED GREY-GREEN]

—the efficient fluid lubricant for transmission and differential

YOUR books will show thirteen months profits during every year–if you sell Graigrene, the efficient *fluid* lubricant for transmission and differential. And while you're piling up extra profits, you'll be making new friends of motorists who now neglect these important zones in their cars.

Graigrene gives perfect lubrication–a constant film of protection to transmission and differential. It always flows freely and penetrates innermost recesses.

Heavy grease means heavy repair bills

Motorists who use heavy grease in transmission and differential are taking chances on buying new gears–on paying big repair bills. Heavy grease can not lubricate these parts properly; it channels, packs at gear sides, fails to reduce friction. Graigrene fights friction–reduces friction load 26%; increases fuel mileage 5.55% per gallon; gives motors 7% more power.

Tell motorists in your community this story–and you'll sell them. You make 50% profit per pound and every car in your territory needs 8 pounds of Graigrene; busses and trucks take 40 pounds; tractors require 50.

5 Reasons Why your customers need *GRAIGRENE*

1. Graigrene performs perfectly, regardless of temperatures. It is just as valuable in saving wear and tear on gears in summer as in the dead of winter.
2. Graigrene gives new pep for summer tours–permits motor to deliver 7% more power than is possible with heavy grease.
3. Graigrene, used instead of heavy grease, cuts friction load 26%.
4. Graigrene, used instead of heavy grease, increases fuel mileage 5.55% per gallon.
5. Graigrene is easy to drain and refill four times a year. That's a story every motorist heeds–and your service men will also appreciate its full meaning.

Get acquainted with Graigrene NOW!

Start selling Graigrene, the efficient fluid lubricant, now! You'll make warm friends of your old and new customers by giving them this tip. And you'll make an extra month's profit every year.

DEALERS—WRITE FOR PARTICULARS NOW!

Manufactured by

Viscosity Oil Company

Established 1894

W. D. SIMMONS, President

Central Manufacturing District, CHICAGO

Phone Yards 7196

Get The Long Green With *GRAIGRENE*

New Stations Do not Create *New* Gasoline and Oil Business

EACH new station built exists on business taken away from established stations and curb fills. It gets this business because it's newer—probably a little more attractive—because it starts out with fresh enthusiasm, to offer snappier and a little more up-to-date service than its competitors. To the passing motorist it looks as if it would do that very thing, and so he stops.

THE old station, pepped up with this same enthusiasm and with up-to-the-minute selling equipment, will give you the same increased gallonage as a new station, but at only a fraction of the cost.

YOU are no longer simply supplying the demand for gasoline and oil. It is not hard for the motorist to find some place to buy nowadays. What he decides now is where shall he buy and why.

THAT'S what interests you. It is up to you to make him decide in your favor. Use equipment designed to carry conviction of full measure and honest dealing with every move. Give him the kind of service that you would like to get yourself. Sell oils that you are proud of, and display them attractively where your customers cannot help but see them—on the island. Light your station at night so that it stands out like an oasis in the desert.

OUR job is to supply the kind of equipment that you need to convince the motorist that you should get his business.

WE have been working for years, developing equipment especially designed to eliminate losses; to definitely stimulate sales; and to increase profits.

WE know that certain of our outfits will actually accomplish these things. We are not anxious to sell you simply pumps. WE WANT TO SEE YOU GET MORE GALLONAGE AND GREATER PROFITS.

We would like to tell you more about it.
Ask us to mail the evidence.

S. F. BOWSER & CO., INC.

——————USE THIS COUPON——————

S. F. BOWSER & Co., Inc.
1302 Creighton Ave., Fort Wayne, Indiana

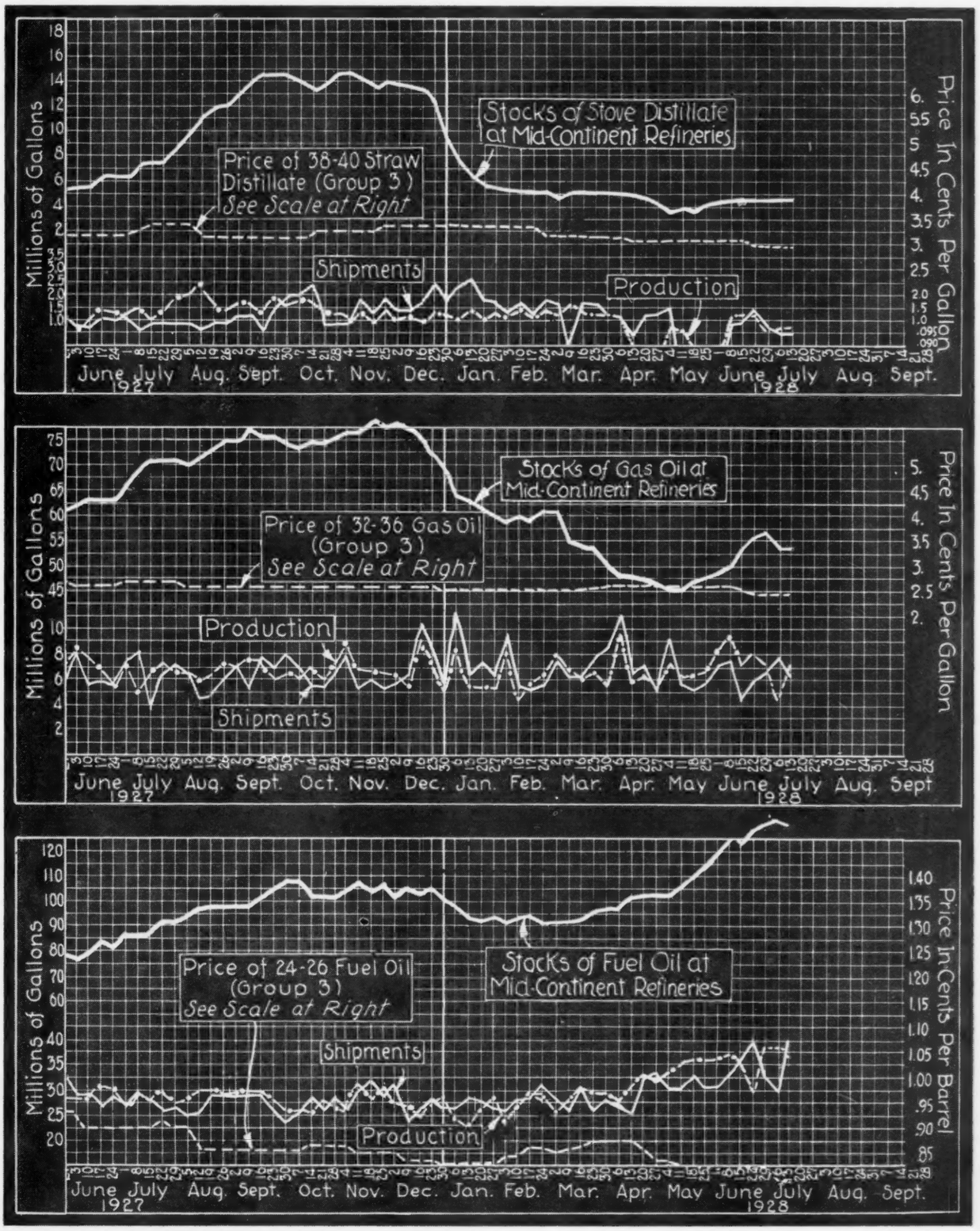
I would like to see the written evidence—how *modern* equipment stops the leaks and increases gallonage *and profits.*

Name .....

Address .....

Barometer of Mid-Continent Refinery Market—Week Ending July 13

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 80 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Stocks of Fuel Oil at Mid-Continent Refineries
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Offer motorists **extra** value with **OPALINE**.. the **extra** service motor oil .....

REG U.S. PAT OFF.

WHEN you become an Authorized Opaline Dealer, you get the exclusive Opaline method for recommending motor oil. This method assures a motorist the right grade of *Opaline to seal the power in his pistons*—that's an *extra* service which Opaline does—that's an *extra* service you give your customers—an *extra* reason why they should keep coming back to you for gas and oil. May we tell you about this common-sense method of selling *precision* in lubrication?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

© 1928 S.R.C.

Refinery - Tank Wagon Markets

National Petroleum News

Natural Gasoline Prices Reach Level Above U.S. Motor Weighted Average

Staff Special
TULSA, July 14

THE Mid-Continent refinery market at the middle of July was unquestionably on the most stable foundation it has had this year, if not for several years.

Exporters the second week of July bought more than 3,000,000 gallons of gasoline, and 1,500,000 gallons of kerosene, and were inquiring for more goods at offerings from 0.125 to 0.25 cent higher than prices paid early in the week.

Domestic gasoline buying continued at a high peak with refiners behind with shipments, a few buying from other refiners, and prices on virtually all grades having maintained a slow but steady advance.

Natural gasoline prices literally jumped upward. Advances of a full cent were made. Goods were hard to find and demand was exceptionally strong from all sources. Prices have moved to a level with U. S. Motor, the average being slightly above the weighted average for Motor.

The export kerosene buying coupled with demand from the harvesting belt has boosted prices fractionally with goods reported scarcer. A few refiners have had to buy on the outside to fill orders.

Distillates and gas oil were unchanged both in price and demand.

Fuel oils lost more ground as stocks increased. Refiners were attempting, however, to solve their problem both by burning more fuel and by cracking some of the surplus.

Neutral oils and cylinder stocks were in steady demand. Wax prices were slightly lower with inquiries not so numerous as was the case just before July 1.

Gasolines

Prices for all grades of refined gasolines advanced steadily. Demand was heavy from both exporters and domestic buyers. Weighted average for 58-60 U. S. Motor in Oklahoma moved above 8.25 cents July 14, and higher quotations were mailed out that day by several refiners to be effective Monday, July 16.

Exporters combed the field for high gravity gasolines. Approximately 3,000,000 gallons of 64-66, 375 e.p., 61-63 390 e.p. and 60-62, 400 e.p. gasolines were bought in north Texas at 8.75, 8.50 and 8.375 cents, respectively. Late in the week reports from that district indicated offers of 9 cents had been made for 375 e.p. gasoline for shipment later in the month.

Little export business was accomplished in Oklahoma and Kansas. Exporters said they found refiners reluctant to accept business even at the same prices the refiners were obtaining for the domestic high gravity goods. That would indicate refiners do not want to change over their runs at present to accept sizable export business. It will be recalled, however, that approximately 2,000,000 gallons of export gasoline were bought the first week of July in Oklahoma, which added to the purchases in north Texas makes a total of over 5,000,000 gallons of gasoline bought since July 1 in the two fields.

With smaller margins and hotter weather in much of the marketing territory, jobbers have been buying more low gravity gasolines since July 1. At the same time at least six Mid-Continent refiners have been buying gasoline from other refiners to apply on their own orders. Conservative estimates place this buying at approximately 600 cars since July 1. One refiner is known to have bought over 200 cars of gasoline, and is still attempting to buy to supply his trade.

Kansas refiners report they are behind with shipments, while the Louisiana and Arkansas refiners say they are out of the market except to take care of their own customers. One Arkansas refiner said Saturday he was limiting his shipments now to only his regular customers who had been on his books for six months or longer.

Oklahoma refiners have been selling actually to their own trade and also to the other refiners, while the new export buying coupled with the coastwise and domestic purchases of U. S. Motor in north Texas has virtually taken those refiners out of the spot market picture for the remainder of the month.

Several inquiries have been received for quotations on gasolines for over the remainder of July, but refiners have for the most part refused to consider any business other than for prompt shipment.

Natural Gasolines

The advance in natural gasoline prices probably has been the most discussed feature of the market. Prices of all grades jumped a full cent between July 7 and 14, with

Weighted Average Prices Oklahoma Market

Through typographical error, weighted average prices of Oklahoma gasolines as of July 9 were omitted from page 37 of some of the July 11 issues of NATIONAL PETROLEUM NEWS, and instead, previous week's prices were published again. July 9 prices of the four major Oklahoma gasolines, and the number of cars sold that day, are:

58-60 U. S. Motor, 437 e. p.	123	8.0732
60-62, 437 e. p.	8	8.2344
60-62, 400 e. p.	48	8.2604
64-66, 375 e. p.	6	8.5417

Note: Due to a new arrangement, Monday's weighted average prices will now be published in the regular refinery table of each issue, instead of Saturday's prices as has been the case. This issue, therefore, on page 118 includes July 16 weighted average prices.

prices of all grades now the same —8.25 to 8.50 cents a gallon.

This price spread gives an average slightly above the weighted average for U. S. Motor in Oklahoma, the first time price of grade AA in Oklahoma has been above the price of U. S. Motor in Oklahoma since Jan. 10, 1927.

Buyers actively inquired for goods all week, with much of their purchases being placed Thursday, Friday and Saturday. One large buyer entered the market late in the week for slightly over 100 cars, and prior to close of business Saturday had bought approximately 55 cars, and reported he had been unable to find any more goods.

Considerable buying has been done for over July shipment, which with the market in its present tight position leaves a comparatively small amount of goods available for prompt shipment.

At least three of the larger manufacturers, meanwhile, continued to seek gasolines to apply on their orders. Their buyers report they have to obtain goods from outside sources due primarily to a drop in production of the lower grades and substantial increases in contract orders.

Kerosenes

Export buying and the harvesting season in the Middle West turned kerosene prices upward. Approximately 1,500,000 gallons of kerosene were bought in north Texas this week for export at 4.25 to 4.50 cents a gallon. At the same time one or two large refiners sought kerosenes for their own distributing systems. Prices moved from 4.25 cents up to a firm 4.50 cents a gallon.

Kansas refiners have been almost swamped with kerosene orders and their prices advanced 0.25 cent. This situation soon reacted on the Oklahoma market. Late in the week one large refiner combed the field for kerosene and the lowest price he could obtain was 4.75 cents for 41-43 water white grade. Two or three refiners advanced quotations for this grade to 4.875 cents. One of these refiners said he had to advance in self defense, that he had little kerosene on hand and that at 4.75 cents a gallon he was getting more business than he could handle.

Exporters continued to inquire in all fields, meanwhile, for 44 gravity kerosene, with no success. Refiners refused in most instances to quote a price, and when one did quote, the price was considerably higher than the exporters felt they could pay.

Distillates and Gas Oil

Stove distillates have been harder to move, several refiners reported. Prices have remained generally unchanged. Buyers are rather reluctant to gamble on the present market and buying for storage has slowed up. The bulk of his order for distillates, one refiner said Friday, was coming from municipal light plants and consumers of that type. The majority of contracts being written for the winter season continued to be on "market date of shipment."

Despite the weakness of fuel oils, the price of gas oils remained generally unchanged. Only odd cars of 32-36 dark gas oil were moved at less than 2.25 cents. The going market remained 2.375 to 2.50 cents, with demand for the uncracked goods steady, especially from refiners who can rerun the oil in cracking units.

Fuel Oils

It is the fuel oil situation that is causing the refiners their only worry. Stocks continued to increase steadily in most of the Mid-Continent and demand has naturally been lessened by the summer months.

Price of 18-22 fuel oil has swung under 60 cents a barrel, with the higher gravities also down in proportion. A few Oklahoma refiners having Dubbs cracking units have been buying some of the straight reduced fuel oil for cracking, but this buying has been sufficient to prevent prices from losing ground.

A few refiners also have arranged to burn more fuel oil under their boilers and stills, but this also has not been sufficient to take up the slack. One refiner said his plant was burning all the fuel possible, since the price of natural gas in his territory was such that he figured he could operate on fuel oil any time the price went below 85 cents a barrel.

Efforts probably will be made to induce many former consumers of fuel oil to return to this product now that it is so cheap. When fuel oil prices were well above $1 a barrel a year or so ago, several railroads and many industrial users returned to coal claiming that it was more economical.

Neutral Oils and Cylinder Stocks

No price changes were made this week in either neutral oils or cylinder stocks. One or two refiners intimated that they would advance quotations on bright stocks early next week. Movement continued comparatively good. One large manufacturer said his stock of bright stock and motor oils was considerably under his stock a year ago and that the harvesting season had caused a good increase in business.

Wax

Price of wax lost ground fractionally with demand reported slower. July and August, however, are generally considered dull months for wax and with stocks reported low in the Mid-Continent refiners are predicting an even better market late in August and through the fall than was experienced late in May and through June.

Pennsylvania Markets Generally Quiet

CLEVELAND, July 14.—Fairly good gasoline demand with receding call for kerosene, fuel oil and viscous neutrals marked the second week in July of western Pennsylvania markets.

Cylinder stock demand was reported as good. Some refiners reported gasoline demand quiet, but on the whole U. S. Motor was in fairly good call. Inclement weather prevailed again this week.

Prices on the whole were unchanged. Following the crude advance July 9 quotations of 10.50 cents for U. S. Motor gasoline became more numerous. Some refiners tacked a .25 cent on their price. High gravity gasoline quotations developed a wide range early in the week, with less variance later on.

Quotations on 45 w.w. kerosene fell to 6 cents at the end of the week. Fuel oil, 36-40, returned to 4.75 cents bottom.

Bright stock prices were unchanged. Contract movement was reported to be excellent, with spot demand slightly less.

LOS ANGELES, July 13.—The Union Oil Co. of California will erect an office building at Oakland, Calif. at a cost of $100,000, it is reported.

INCREASE YOUR ALE

Color your anti-knock or high test gasoline an attractive shade by which the public will recognize and remember your good product.

DYKEM GASOLINE COLORS

Made especially for gasoline; simple, safe, economical

BLUE GREEN PURPLE RED ORANGE

Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, INCORPORATED

11th & Monroe Sts. **St. Louis, Mo.**

South Dakota Seeks Low Okla. Rate

WASHINGTON, July 16.—Without expressing any opinion as to the practice of the oil industry in using the Tulsa price as the foundation for a large part of its price structure, the Board of Railroad Commissioners of South Dakota has told the Interstate Commerce Commission that the freight rate from Group 3 is of vital importance, regardless of the amount of the movement of petroleum products from that group to any point in the United States.

The South Dakota board conveyed the information on that point in the course of printed arguments on the petition of the railroads asking for a reversal or modification of the rate regulating body's decision in the case known as Mid-Continent Oil Rates, 1925, involving rates to the territory north of Kansas City to the Canadian border.

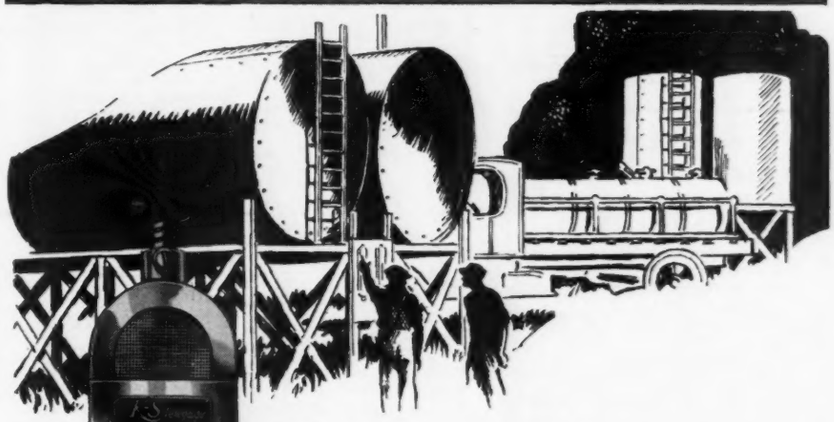
Inasmuch as the South Dakota officials professed to be speaking particularly for the receivers of petroleum products represented by the South Dakota Independent Oil Jobbers Association, the declaration of the South Dakota commissioners may be taken as the traffic views of the Independent jobbers.

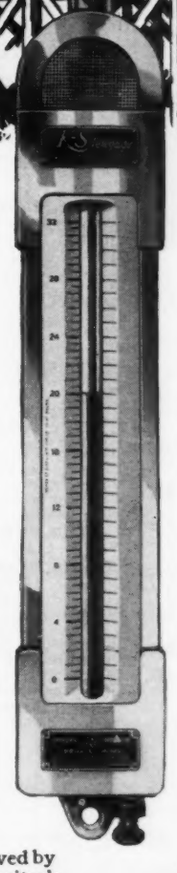
The railroads asked for a reversal of the order reducing rates on the ground, among other things, that the movement of petroleum products from Group 3 to South Dakota was relatively small and that the reductions ordered from the Mid-Continent groups adversely affected the revenues of the railroads on traffic from the Wyoming shipping points. They asserted that the reduction in rates from Group 3 had caused representations to be made to them in behalf of reductions from Casper. The South Dakota commissioners said that even if so that that was of no importance.

"The rates from Group 3," said the South Dakota commissioners, "are of importance not only in connection with the traffic moving from Group 3 but the Group 3 rates are also used as a basis for the selling price of the petroleum products from Wyoming and all other shipping districts. The South Dakota receivers, in their invoices, were penalized by the high Group 3 rates on traffic moving even from the adjacent Wyoming territory. The rates from Group 3 are still high, both actually and as compared with the adjustment prescribed by the commission to adjacent points in Iowa and Minnesota."

In other words the South Dakota jobbers object to having the commission allow the railroads to have higher rates from Group 3, not because they buy in Group 3 to a large extent, but because the Tulsa price is made the foundation for the

THE HYDROSTATIC DISTANT READING GAUGE





"Delivery Leak" Losses Need Bother You No Longer

THE continual leakage of petroleum products during handling—in small quantities that add up to heavy losses—is being eliminated where the K-S Telegage is used.

Replacing all the uncertainties and slackness that went with the old-fashioned measuring stick and tape, the K-S Telegage keeps before the control man's eye an accurate check of liquid volume in each storage tank.

At all times, with ease and accuracy, the K-S Telegage tells at a glance the depth of liquids in storage tanks. Placed at any distance from the tank and either above or below it as you may desire this precision instrument guards your petroleum products against checking errors, production losses and delivery "leaks." The reliability of the Telegage is assured by the fact that it is a product of the world's largest maker of distant reading gauges.

Our engineering department will be pleased to discuss any industrial gauge problem, if you will write giving a full description of your requirements. Give the Baume or Specific Gravity of each liquid to be measured, and the distance from tank to desired location of gauge. Descriptive folder sent on request.

Approved by Underwriter's Laboratories

KING-SEELEY CORPORATION
308 Second Street ANN ARBOR, MICHIGAN

Branch Offices:
New York: 44 Murray St.
Chicago: 473 Wrigley Bldg.

The K-S Telegage

BE CERTAIN WITH THE *K—S TELEGAGE*

Standard factory equipment on three-fourths of all cars selling for $700 or more.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

	Prices July 16	Prices July 9	Prices July 2
PENNSYLVANIA			
52-54 Naphtha	10.00 –10.25	10.00 –10.25	9.75 –10.25
54-56 Naphtha	10.00 –10.375	10.00 –10.375	9.75 –10.25
58-60 U.S. Motor 437 e.p.	10.50 –11.00	10.50 –11.00	10.50 –11.00
60-62 400-410 e.p. gasoline	11.00 –11.50	11.00 –11.50	11.00 –11.50
64-66 390 e.p. gasoline	11.50 –11.75	11.50 –11.75	11.25 –12.00
68-70 Str.-run gas. 350-360 e.p.	11.75 –12.50	12.00 –12.50	11.75 –13.00
OKLAHOMA			
48-50 450 e.p. naphtha	†7.75	†7.50 – 7.75	†7.375
50-52 450 e.p. naphtha	†7.75	†7.50 – 7.75	†7.375
56-58 450 e.p. gasoline	7.875– 8.125	7.75 – 7.875	7.50
58-60 450 e.p. gasoline	8.00 – 8.25	7.875– 8.00	7.625
64-66 390 e.p. gasoline	8.50 – 8.625	8.375	8.125– 8.25
68-70 350-360 e.p. gasoline	8.875	8.50 – 8.625	8.50
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	8.3916	8.0732	7.9493
60-62 437 e.p. gasoline	8.4018	8.2344	8.1320
60-62 400 e.p. gasoline	8.6563	8.2604	8.1429
64-66 375 e.p. gasoline	8.7500	8.5417	8.2917
KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	8.375– 8.50	8.25 – 8.375	8.125– 8.25
60-62 400 e.p. gasoline	8.75	8.50 – 8.625	8.25 – 8.375
64-66 375 e.p. gasoline	9.00	8.75	8.375
NORTH TEXAS			
48-52 450 e.p. naphtha	†7.375	†7.25 – 7.375	†7.25
56-58 450 e.p. gasoline	†7.50 – 7.625	†7.50	†7.375– 7.50
58-60 450 e.p. gasoline	†7.75	†7.50 – 7.625	†7.50
58-60 U.S. Motor 437 e.p.	8.00 – 8.125	8.00	7.875– 8.00
60-62 400 e.p. gasoline	8.50	8.25	8.125– 8.25
64-66 390 e.p. gasoline	8.75	8.25 – 8.375	8.25
64-66 375 e.p. gasoline	9.00	8.50 – 8.75	8.50 – 8.625
68-70 350-360 e.p. gasoline	9.00 – 9.25	8.75	8.50 – 8.625
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	9.00	8.50 – 8.75	8.50 – 8.625
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	8.25	7.75 – 8.00	7.75 – 8.00
58-60 450 e.p. gasoline	8.50	7.875– 8.125	7.875– 8.125
58-60 U.S. Motor 437 e.p.	9.00	8.625	8.50
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	9.00 –12.00	9.00 –12.00	8.50 –12.00
58-61 U.S. Motor 437 e.p.	9.50 –13.00	9.00 –13.00	9.00 –13.00
42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	**8.50	**7.375– 7.50	‡7.00 – 7.125
Grade A, 72-79.9, 90% Recovery	**8.50	**7.375– 7.50	‡7.00 – 7.125
Grade BB, 84-92, 85% Recovery	**8.50	**7.25	‡6.875– 7.00
Grade B, 76-83.9, 85% Recovery	**8.50	**7.25	‡6.875– 7.00
Grade C, 80-92, 78% Recovery	**8.50	**7.25	‡6.875– 7.00

‡Untreated Grade AA sold for 6.75c per gal. July 2.

NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	**8.50	**7.375– 7.50	‡7.00 – 7.125
Grade A, 72-79.9, 90% Recovery	**8.50	**7.375– 7.50	‡7.00 – 7.125
Grade BB, 84-92, 85% Recovery	**8.50	**7.25 – 7.375	‡6.875– 7.00
Grade B, 76-83.9, 85% Recovery	**8.50	**7.25 – 7.375	‡6.875– 7.00
Grade C, 80-92 78% Recovery	**8.50	**7.25	‡6.875– 7.00

‡All grades naturals represent quotations and offers to buy.

NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†8.50 – 8.75	†7.75	†7.00 – 7.25
Grade BB	†8.50 – 8.75	†7.50	†6.50 – 6.75
Grade C	†8.50 – 8.75	†7.50	†6.50 – 6.75
CALIFORNIA			
75-85, 375-390 e.p. blend	6.00 – 7.00	5.50 – 7.00	5.50 – 7.00

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.	†8.00 – 8.125	†7.75	†7.50

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.00 – 6.50	6.125– 6.50	6.25 – 6.75
46 w.w. kerosene	6.50 – 7.00	6.50 – 7.00	6.625– 7.00
47 w.w. kerosene	6.875– 7.25	6.875– 7.25	6.875– 7.25
300 mineral seal	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations

	Prices July 16	Prices July 9	Prices July 2
OKLAHOMA			
41-43 w.w. kerosene	4.75	4.50 – 4.75	4.50 – 4.75
42-44 w.w. kerosene	5.00	4.875– 5.00	4.875– 5.00
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	5.00 – 5.25	4.75 – 5.125	4.75 – 5.125
42-44 w.w. kerosene	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
NORTH TEXAS			
40-42 w.w. kerosene	4.375	4.25	†4.125– 4.25
41-43 w.w. kerosene	4.50 – 4.625	4.375	†4.375– 4.50
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	5.25	5.25	5.25
ARKANSAS (Arkansas destination only)			
42-44 kerosene	5.25	5.25	5.25
CALIFORNIA			
38-40 w.w. kerosene	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

NEUTRAL OIL

Vis.			
PENNSYLVANIA	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	32.50 –33.50	32.50 –33.50	32.00 –33.50
180 No. 3 Assoc. Filt.	30.50 –31.75	31.00 –31.75	30.50 –31.50
150 No. 3 Assoc. Filt.	27.00 –28.00	27.00 –28.00	27.00 –28.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.50 – 9.00	7.50 – 9.00	7.75 – 9.00
36 Min. Neut. 300-305 Flash	6.00 – 8.50	7.00 – 8.50	7.00 – 8.50
****OKLAHOMA**			
Vis. Color	(Viscosity at 100°F.)		
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.625–11.00	9.625–11.00	9.625–11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	8.50 –10.00	8.50 –10.00	8.50 –10.00
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL			
Vis. Color	(Viscosity at 100°F., pour test 0)		
100—No. 2 Unfilt. Pale	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25
200—No. 3 Unfilt. Pale	10.00 –10.50	10.00 –10.50	10.00 –10.50
300—No. 3 Unfilt. Pale	11.00 –11.50	11.00 –11.50	11.00 –11.50
500—No. 3½ Unfilt. Pale	13.00 –13.50	13.00 –13.50	13.00 –13.50
750—No. 4 Unfilt. Pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 5½ Red Oil	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
500—No. 6 Red Oil	10.50 –11.00	10.50 –11.00	10.50 –11.00
750—No. 6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
CALIFORNIA			
Vis. Color	(Viscosity at 100°F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	21.50 –24.00	21.50 –24.00	21.50 –24.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.00 –10.00	8.00 –10.00	8.50 –10.00
600 St. Ref. Dark Green	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA	(1-inch Immersion Test)		
600 Steam Refined	12.25 –13.50	12.00 –13.50	11.75 –13.00
650 Steam Refined	14.50 –15.50	14.50 –15.50	13.75 –15.50
600 Flash	17.00 –18.00	16.50 –18.00	16.50 –18.00
625 Flash	26.50 –28.00	27.00 –29.00	27.00 –29.50
600 Warren E	17.50 –18.50	17.50 –18.50	17.50 –18.00
600 Oil City E	16.50 –17.50	17.00 –17.50	16.50 –17.00
600 D Filtered	23.00 –24.00	22.50 –26.00	22.50 –26.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	35.00 –36.00	35.00 –36.00	35.00 –36.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	33.00 –34.00	33.00 –34.00	33.00 –34.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

prices on products from Wyoming to South Dakota and the Tulsa price always includes the freight rates from Tulsa.

About four years ago the Federal Trade Commission abolished a system of price quoting on iron and steel almost precisely like Tulsa price quoting system of which the South Dakota jobbers talk in their argument. Prior to that abolition iron and steel were quoted on the theory that all the iron and steel produced in the country came from Pittsburgh. The system was known as the "Pittsburgh plus" basis. That is to say quotations were made so that if the quotation were accepted, the buyer had to pay the freight rate from Pittsburgh, even if the steel he bought was made right at the place where he did the buying.

Since the abolition of that system prices are being quoted at the mill where the product is made. The seller probably takes freight rate from Pittsburgh into consideration in quoting the price, but according to men in the steel industry the order forbidding "Pittsburgh plus" has resulted in greater variations in prices.

Whether on account of the abolition of the "Pittsburgh plus" basis or for some other reason, Pittsburgh steel makers who used to act as if the freight rate was something in which they had no interest have taken a different attitude. They now fight about the freight rates to various

(*Continued on Page* 120)

Log of the Ice Locked No. 1 Hoye

(*Continued from Page* 46)

cellar from all braden heads.

May 17 and 18—Same as May 16.

May 19—Drilling on ice. Bailer blew up in hole, line bridged in master gate.

May 20—Fishing for bailer. Changing mud hog pumps.

May 21—Fishing for bailer. Connecting up mud hog pump.

May 22 and 23—Fishing for bailer.

May 24—Got hold of bailer and it blew out of hole into top of rig.

May 25—Repairing rig.

May 26 and 27—Same as May 25.

May 29—Trying to pump mud behind 6¼, 8 and 10-inch casings.

May 30, 31, June 1, 2, 3, 4 and 5—Pumping mud behind casings.

June 6—Washing boiler and cleaning up around rig.

June 7—Cleaning up around rig and putting on roof.

June 8—Pumping water in hole, trying to kill.

June 9—Changing connections, preparing to put on circulating head.

June 10—Putting on circulating head.

June 11—Drilling on bridge at 158 feet.

They Continue to Buy and Use

WELL MADE

HERCULES DELIVERY CANS

THE FLANGED TOP
CAN
THAT MAKES POURING
EASY

**Note the Handle on Top—
Easy to Lift and Carry!**

5 and 10 GAL. Capacity

BUILT TO WEAR!

Our factory output has increased yearly to the point that we are now shipping Hercules Delivery Cans to Distributors over the entire country. Increased demand for these cans is evidence that Hercules Cans fill every needed requirement.

Hercules Delivery Cans are made to withstand the abuse given a container of this nature and we have equipped them with 4½ in. Malleable iron handle screw plugs fitted into heavy steel necks providing one additional handle for convenience of handling.

Each Hercules has two hollow steel handles Acetylene Welded to the breast, cannot come loose.

Hercules Delivery Cans

**Winning and Holding New Friends
— and Old —**

The most gratifying knowledge that can come to a manufacturer is to know that his steady and lasting increase is due entirely to his product meeting all requirements as to material and workmanship as well as his fair price. New customers as well as old are repeatedly ordering Hercules Delivery Cans, wholly because of these virtues. Ever-increasing demands of the Oil trade find us every ready to serve them.

**Order from Your Distributor
or
the Manufacturer**

METAL BARREL CORP.

PEORIA, ILLINOIS

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices July 16	Prices July 9	Prices July 2
Per pound, New York			
122-124 white crude scale	4.25 – 4.375	4.375	4.25 – 4.50
124-126 white crude scale	4.50	4.50	4.50
OKLAHOMA			
**124-126 White Crude Scale	4.00 – 4.25	4.125– 4.25	4.125– 4.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	4.75 – 5.125	5.00 – 5.125	4.75 – 5.00
30-34 fuel oil	4.50 – 4.875	4.625– 4.875	4.50 – 4.875
28-32 fuel oil	4.50 – 4.625	4.625	4.50 – 4.625
OKLAHOMA			
38-40 straw distillate	2.875– 3.00	2.875– 3.00	2.875– 3.00
36-38 straw distillate	2.75	2.75	2.75
32-36 gas oil, straw	†2.50 – 2.75	†2.50 – 2.75	†2.50 – 2.75
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
28-30 fuel oil (in bbls.)	$0.85 – 0.875	$0.85 – 0.875	$0.85 – 0.875
26-28 fuel oil (in bbls.)	$0.775– 0.80	$0.775– 0.825	$0.775– 0.825
24-26 fuel oil (in bbls.)	**$0.675–0.70	**$0.675–0.725	**$0.70– 0.75
22-26 fuel oil (in bbls.)	**$0.575–0.625	**$0.625–0.65	**$0.65
18-22 fuel oil (in bbls.)	**$0.55– 0.60	**$0.60– 0.65	**$0.625–0.65
16-18 fuel oil (in bbls.)	**$0.55	**$0.575	**$0.60
14-16 fuel oil (in bbls.)	**$0.55	**$0.575	**$0.60
KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.25	3.25	3.25
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
24-26 fuel oil	*$0.75	*$0.75 – 0.80	*$0.80– 0.825
18-22 fuel oil	*$0.675	*$0.70	*$0.70– 0.725
NORTH TEXAS			
38-40 straw distillate	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
32-36 gas oil, cracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 gas oil, uncracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
24-26 fuel oil (in bbls.)	$0.50 – 0.525	$0.50 – 0.525	$0.575– 0.60

†Prices Nominal ††Only One Refiner Quoting *Quotations only

GULF COASTAL	Prices July 16	Prices July 9	Prices July 2
Fuel (in bbls.)	$1.30 –$1.35	$1.30 –$1.35	$1.30 –$1.35
Gas oil	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.875	2.625– 2.875	2.625– 2.875
32-36 gas oil, straw	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
16-20 fuel oil (in bbls.)	$0.65 –$0.70	$0.70	$0.70 – 0.75
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.75	2.75	2.75
Road Oil	$1.15	$1.15	$1.15
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 –$0.75	$0.65 –$0.75	$0.65 –$0.75
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$0.90 –$1.10	$0.90 –$1.10	$0.90 –$1.10
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ½c to ¾c per pound less.)			
Snow White	8.125– 8.50	8.125– 8.375	8.125– 8.375
Lily White	7.125– 7.50	7.125– 7.375	7.125– 7.375
Cream White	6.125– 6.50	6.125– 6.375	6.125– 6.375
Blonde	....	††4.50	††4.50
Light Amber	3.50 – 3.625	3.375– 3.625	3.375– 3.625
Amber	3.125– 3.25	3.125	3.125
Red	2.75 – 3.00	2.75 – 2.875	2.75 – 2.875

PETROLEUM COKE

****OKLAHOMA**

(Per ton in car lots)

Lump	$4.50 –$5.00	$4.50– 5.00	$4.50 – 5.00
Still run	$2.75 –$3.00	$2.75– 3.00	$2.75 – 3.00
Breeze	$1.75 –$2.00	$1.75– 2.00	$1.75 – 2.00

****Represents Both Sales and Quotations**

South Dakota Seeks Low Okla. Rate

(*Continued from Page* 119)

points with the enthusiasm of wildcats.

The South Dakota jobbers would not get any where were they to assert in any document filed with the Interstate Commerce Commission that they were being unfairly treated by reason of the selling on the Tulsa basis because that body has nothing to do with the enforcement of the unfair methods of competition law. That is the province of the Federal Trade Commission.

The law allows them to point out that the Tulsa basis makes the rates from the Tulsa group of prime importance to them in buying oil from Wyoming refiners. That is what they have done, if it be assumed that the South Dakota railroad commissioners are not talking out of turn when they assert that they are particularly interested in the part of the case relating to the Independent jobbers in South Dakota.

TULSA, July 16.—Rex Winger, general manager of the Cushing Refining & Gasoline Co., has been recuperating in a hospital after an operation for appendicitis. He is now back at his desk.

Late Market Changes

SHREVEPORT.—On July 17 Louisiana Oil Refining Corp. advanced Urania, La. crude 10 cents, making new price 85 cents per barrel. Last previous change was a 15-cent cut on Nov. 18, 1927.

* * *

NEW YORK,—On July 17 Standard Oil Co. of New Jersey advanced, prices of gasoline for export in cases 0.50 cent per gallon, making new price 26.40 cents per gallon in cases. It also reduced export kerosenes in cases 0.25 cent per gallon, making price of 43-45 water white 18.15 cents and 42-44 Standard white, 17.15 cents per gallon in cases.

Last previous change on cased export gasoline was a 0.50 cent advance on June 12 and on kerosene, a 0.25 cent advance on April 20.

Shipments From Los Angeles

LOS ANGELES, July 14.—Petroleum shipments leaving Los Angeles harbor for points outside of Pacific coast trade territory week ended July 7 were 1,020,461 barrels, or a daily average of 145,780 barrels, compared with 1,361,100 barrels the previous week, or a daily average of 194,443 barrels.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of Kentucky—S. s. price only of gasoline reduced 1 cent, Covington, to 20 cents, **June 28.**

Continental Oil—S. s. prices only of gasoline advanced 1 cent, Wyoming, effecting a 3 cent spread between w. and s. s. prices, **July 10.**

T. w. and s. s. prices gasoline advanced 1 cent generally through Montana, with a few exceptions and some points advanced only ½ cent, July 10.

* * *

Kerosene Changes

Standard of Kentucky—Kerosene price reduced 1 cent, Augusta, to 15.5 cents t. w., **July 2.**

Standard of Nebraska—Kerosene prices reduced 1 cent, through Nebraska, **July 9.**

NEW YORK.—On July 17 Standard Oil Co. of New York advanced kerosene price at Rochester 1 cent, making new tank wagon price 13 cents. Former price had been 12 cents.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)

These Prices in Effect July 16, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	14
Baltimore, Md.	16	4	20	23	12
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	14
Danville, Va.	16	5	21	*	14
Norfolk, Va.	15	5	20	20	14
Richmond, Va.	16	5	21	24	14
Roanoke, Va.	16	5	21	24	14
Petersburg, Va.	16	5	21	24	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	23	14
Parkersburg, W. Va.	16	4	20	23	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	16	5	21	24	14
Columbia, S. C.	16	5	21	24	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	17	0	17	20	15
Buffalo, N. Y.	17	0	17	19	15
Rochester, N. Y.	17	0	17	20	15
Syracuse, N. Y.	17	0	17	19	15
Boston, Mass.	17	0	17	19	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	17	4	21	23	15
Burlington, Vt.	17	3	20	22	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	17	*	17	*22	14
Philadelphia, Pa.	17	*	17	*22	14
Allentown, Pa.	17	*	17	*22	14
Erie, Pa.	17	*	17	*22	14
Scranton, Pa.	17	*	17	*22	14
Altoona, Pa.	17	*	17	*22	14
Dover, Del.	17	3	20	22	14
Wilmington, Del.	17	3	20	22	14
Providence, R. I.	17	2	19	21	15
Boston, Mass.	17	0	17	19	15
Springfield, Mass.	17	0	17	19	15
Worcester, Mass.	17	0	17	19	15
Hartford, Conn.	17	2	19	21	14
New Haven, Conn.	17	2	19	21	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Ashland, Ky.	15	5	20	22	15.5
Catlettsburg, Ky.	15	5	20	22	15.5
Lexington, Ky.	14	5	19	21	15.5
Louisville, Ky.	14	5	19	21	14
Covington, Ky.	15	5	20	20	15.5
Clarksdale, Miss.	15	4	19	21	14.5
Gulfport, Miss.	††16.5	4	††20.5	22.5	14
Jackson, Miss.	15	4	19	21	14.5
Natchez, Miss.	14.5	4	18.5	20.5	14
Vicksburg, Miss.	14.5	4	18.5	20.5	14
Birmingham, Ala.	17	4	21	23	16
Mobile, Ala.	17	4	21	23	15
Montgomery, Ala.*	18	4	22	24	16.5
Atlanta, Ga.	17	4	21	23	†16.5
Augusta, Ga.	17	4	21	23	†15.5
Macon, Ga.	17	4	21	23	†16.5
Savannah, Ga.	15	4	19	19	14.5
Jacksonville, Fla.	15	5	20	22	13.5
Miami, Fla.	17	5	22	24	15.5
Tampa, Fla.	15	5	20	22	13.5
Pensacola, Fla.	**16	5	**21	23	13.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	14	0	14	16	11
Decatur, Ill.	14.2	0	14.2	16.2	11.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	10.2
Joliet, Ill.	14.4	0	14.4	16.4	11.3
Peoria, Ill.	14.2	0	14.2	16.2	11.1
Quincy, Ill.	14.2	0	14.2	16.2	10.9
Indianapolis, Ind.	14.2	3	17.2	19.2	12.2
Evansville, Ind.	14	3	17	19	12
South Bend, Ind.	14.4	3	17.4	19.4	12.4
Detroit, Mich.	14.8	3	17.8	19.8	12.7
Grand Rapids, Mich.	14.7	3	17.7	19.7	12.6
Saginaw, Mich.	14.9	3	17.9	19.9	12.8
Green Bay, Wis.	14.6	2	16.6	18.6	11.4
Madison, Wis.	14.3	2	16.3	18.3	11.1
Milwaukee, Wis.	14.1	2	16.1	18.1	10.9
La Crosse, Wis.	15.2	2	17.2	19.2	12
Minneapolis, Minn.	15.2	2	17.2	19.2	11.9
Duluth, Minn.	15.5	2	17.5	19.5	11.9
Mankato, Minn.	15.1	2	17.1	19.1	11.7
Des Moines, Ia.	14.5	3	17.5	19.5	11.3
Davenport, Ia.	14.5	3	17.5	19.5	11.3
Sioux City, Ia.	14.1	3	17.1	19.1	10.9
Mason City, Ia.	14.5	3	17.5	19.5	11.3
St. Louis, Mo.	*13.6	2	15.6	17.9	10.3
Kansas City, Mo.	†14.9	2	16.9	18.9	9.6
St. Joseph, Mo.	†14.5	2	16.5	18.5	10.2
Fargo, N. D.	16.9	2	18.9	20.9	13.9
Grand Forks, N. D.	17.2	2	19.2	21.2	14.2
Minot, N. D.	16.9	2	18.9	20.9	13.9
Pierre, S. D.	15.5	4	19.5	21.5	12.9
Huron, S. D.	15.5	4	19.5	21.5	12.9
Wichita, Kans.	12.8	2	14.8	16.8	9.8
Bartlesville, Okla.	12.5	3	15.5	17.5	9.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline is ½c for 750 gals. or more a month; 1c for 2,000 gals. or more a month; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month. All discounts adjusted annually.

*Includes city tax of ½c.

†Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	14	3	17	20	14.5
Pueblo, Colo.	14	3	17	20	14.5
Grand Junction, Colo.	17.5	3	20.5	23.5	18
Casper, Wyo.	15	3	18	21	13
Cheyenne, Wyo.	16	3	19	22	14.5
Butte, Mont.	20.5	3	23.5	23.5	19
Helena, Mont.	20.5	3	23.5	25.5	19
Salt Lake City, Utah.	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Alburquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	15	5	20	22	12
Alexandria, La.	14	2	16	18	†14
Baton Rouge, La.	13	2	15	17	†12.5
Lake Charles, La.	14.5	2	16.5	18.5	†14
New Orleans, La.	*14.5	2	*16.5	*18.5	†14
Shreveport, La.	14.5	2	16.5	18.5	†13
Lafayette, La.	14	2	16	18	†13.5
Bristol, Tenn.	17	3	20	22	14
Chattanooga, Tenn.	16.5	3	19.5	21.5	15
Knoxville, Tenn.	17	3	20	22	15
Nashville, Tenn.	16	3	19	21	15
Memphis, Tenn.	14	3	17	19	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	14	3	17	19	14

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	18.25	11.25
McCook	15.75	2	17.75	19.75	12.75
Norfolk	14.75	2	16.75	18.75	11.75
North Platte	15.75	2	17.75	19.50	12.50
Scottsbluff	15.75	2	17.75	19.75	12.25

MAGNOLIA PETROLEUM

Muskogee, Okla.	15	3	18	20	11
Oklahoma City	14	3	17	19	11
Tulsa, Okla.	13	3	16	18	11
Fort Smith, Ark.*	13	*3	16	18	12
Little Rock, Ark.	15	5	20	22	12
Texarkana, Ark.*	13.5	*3	16.5	20.5	12
Dallas, Tex.	13	3	16	20	11
Fort Worth, Tex.	13	3	16	19	11
Houston, Tex.	13	3	16	20	15
San Antonio, Tex.	13	3	16	19	10
El Paso, Tex.	14	3	17	20	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		19	....

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	22.5	3	25.5	29	22.5

MANITOBA

Winnipeg	21.5	3	24.5	28	21.5

SASKATCHEWAN

Regina	25.5	3	28.5	33	25.5

ALBERTA

Edmonton	26.5	3	29.5	33	26.5
Calgary	22.5	3	25.5	29	22.5

BRITISH COLUMBIA

Vancouver	21	3	24	28	22

QUEBEC

Montreal	20.5	5	25.5	29	21
Quebec City	22.5	5	27.5	33	23
Three Rivers	22.5	5	27.5	31	23

NEW BRUNSWICK

St. John	22.5	3	25.5	30	22
Moncton	22.5	3	25.5	30	2

NOVA SCOTIA

Halifax	22.5	5	27.5	32	22
Sydney	22.5	5	27.5	32	22

PRINCE EDWARD ISLAND

Charlottetown	22.5	5	27.5	31	22

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c; Indiana, 2/25c; Kansas, 1/50c; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c; Missouri, 1/50c; Nebraska, 3/50 to 1/2c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 4/25c; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Temporary Gasoline Scarcity Boosts Export Market

Staff Special
NEW YORK, July 14

A TEMPORARY scarcity of goods available for reasonably prompt loading sent gasoline prices sky rocketing at the Gulf this week. The volume of business actually placed was small in comparison to several of the recent active weeks but prices reached new peaks for the year.

U. S. Motor gasoline sold Monday, July 9, at 9.375 cents and toward the end of the week at 9.625 cents. A transaction including 64-66, 375 end point gasoline was closed on Monday at 10.375 cents for this grade and a sizable quantity brought 11 cents later in the week.

Exporters were somewhat baffled by the action of the market, particularly the apparent willingness of buyers to pay appreciably higher prices with little resistance. There was no attempt on the part of suppliers to explain the higher prices other than that scarcity of gasoline had become so stringent it was strictly a seller's market and that limited to one or two.

Three major export suppliers were not in a position to make an offer of any kind for the business placed this week.

In the past advancing gasoline prices have brought a flood of buying from the French. The trade was at a loss to know what it would do if such activity were to materialize in the next week or two.

According to reports, foreign oil companies are experiencing record gasoline consumption and stocks are falling rapidly. Replacement purchases in the next 60 days are expected to be large and as one market authority views the situation, a resumption of buying by French companies is in the offing.

Prices for this week were determined largely by the two cargoes purchased by the French subsidiary of a leading Independent American refiner. The parent company sold both cargoes. Each transaction was considered representative of the open market, however, in view of the fact that other suppliers were afforded an opportunity to bid for the business.

The first cargo was closed July 9 and to be lifted the latter part of August or the fore part of September, consisted of approximately 65,000 barrels of U. S. Motor and 64-66 gravity, 375 end point gasoline, prime white and water white kerosene. Ruling prices were 9.375 cents; 10.75 cents; 6.25 cents and 7.25 cents respectively.

The second cargo, which is for Aug. 15-Sept. 15 loading, specified 58,000 barrels of the same four grades and closing prices were reported as 9.625 cents; 11 cents; 6.25 cents and 7.25 cents respectively. An independent French buyer inquiring for approximately 21,000 barrels of U. S. Motor and 64-66, 375 end point gasoline to be loaded with the second of the two aforementioned cargoes had not closed up to the end of the week. Quotations for this business were 9.625 cents for U. S. Motor and 11 to 11.25 cents for 64-66.

The sale of 35,000 barrels of 60-62, 400 end point gasoline for prompt loading at 10.50 cents f.o.b. the Gulf was reported by a leading supplier. Whether the goods is for foreign or east coast movement was not divulged. An inquiry from a British buyer was reported in the market late in the week for approximately 64,000 barrels of 64-66, 375 end point gasoline for prompt shipment. This was still pending as the week ended.

Inquiries from another United Kingdom buyer involving approximately 160,000 barrels of gasoline and kerosene circulated among the trade last week. These inquiries combined with inquiries from two German buyers left a large volume of prospective business in the market as the week of July 9 ended.

Few suppliers are in position to offer kerosene at the present time. Those with any appreciable amount in storage at the Gulf were asking 6.25 cents for prime and 7.25 cents for water white. Foreign buying for fall requirements is expected to keep kerosene prices at their present levels with the possibility of stimulating slight increases.

The foreign demand for gas oil at the Gulf has been somewhat better the past two weeks and prices have remained fairly steady. A Scandinavian buyer who last week purchased a full cargo of 26 plus gravity gas oil was inquiring this week for a second cargo to be lifted in September. Other foreign buyers displayed considerable interest in this commodity but viewed prices as slightly too high.

At least one inquiry offered American refiners this week is known to have been placed in Russia. Fuel oil continued to ease off at the Gulf, cargoes of low gravity Bunker C oil were freely offered at 70 cents a barrel this week and high gravity oil was available for 5 to 10 cents a barrel more. Bunker prices were generally unchanged.

Domestic Gasoline Markets Dull Along Atlantic Seaboard

Staff Special
NEW YORK, July 14

EASTERN domestic gasoline markets along the Atlantic seaboard were dull during the second week of July. Jobber buying was down to a minimum for midsummer and even advancing prices, which have featured the market since the first of the year, were lacking.

Consumption of gasoline bounded upward as a result of a four-day heat wave which struck the east coast last week end. Although jobbers began the month with their storage tanks virtually brimming full, it was generally felt among the trade in New York that, combined with the heavy July 4 consumption, the excellent motor weather prevailing thus far in July, would bring jobbers into the market for replacements.

Pointing to the activity of jobbers so far this month, several of the trade have felt the 10 to 15-day spot market plan which eastern refiners recently inaugurated, was proving unworkable. At the same time others pointed out that inactivity the first half of this month has been no more than usual. The late June purchases that jobbers made, it is felt, will last at least for another five or six days. According to their ideas, it will take some time yet for jobbers to reckon their purchases on the new basis and with operating margins as narrow as they are now, jobbers are reluctant to make further commitments until the last possible moment. In view of the exceptionally good export business most of the major companies have been enjoying this spring and summer, several of the trade are of the opinion that it will be some time yet before sellers are pressed for domestic orders.

The offerings of California gasoline in eastern tank car markets were much lighter this week and subsequently, there is little likelihood of goods from the west coast acting as a disturbing factor in the east, especially with prices as firmly held as they are on the Pacific coast.

Eastern sellers of California gasoline assert that replacement prices would prevent them from lowering their tank car prices, even as much as 0.125 cent.

Tank car prices for U. S. Motor gas-

(*Continued on Page* 126)

FARRELL
Truck Tanks
built to any size or style

No matter what your needs are, Farrell builds to any capacity, any shape, and offers prompt service in filling your order whether it may be for a single unmounted, unpainted Ford tank or a complete fleet of "big ones" mounted, painted and lettered.

Farrell's method of designing and building truck tanks embodies many exclusive advantages such as — ***Flexible Tank Construction*** consisting of separate tanks couple banded together. This construction eliminates straining compartment leakage and results in longer service and lower upkeep. ***Cushioned Steel Underframe*** takes the road shocks. ***Positive Acting Controlled Safety Valves*** — you can't leave them open. ***Double Safety Bumper Bar*** a real protection. ***Steel Bucket Box*** — lots of room — wide open doors. ***Sturdy Built*** — strength — not excessive weight. ***Low Over-all Height*** — relieves strain — no side sway.

The truck tank shown is one of many new Farrell designs with pipe holders for the hose. This style is adapted to any size and make of chassis.

Farrell truck tanks present an attractive clean cut appearance. They're good advertising for you. It will pay you to get Farrell's attractive prices and details.

FARRELL MANUFACTURING COMPANY

[Works — Joliet, Illinois]

CHICAGO — 1213 W. Washington Blvd.

Detroit — 5459 Grand River Ave. • • Cleveland — 4336 Broadway

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, represent majority of quotations and sales.)

	July 16	July 9	July 2
U.S. Motor gasoline, New York harbor	10.75	10.75	10.75
U.S. Motor gasoline, Philadelphia	10.75	10.75	10.75
U.S. Motor gasoline, Boston district	*11.25	*11.25	*11.25
U.S. Motor gasoline, Providence district	*11.25	*11.25	*11.25
U.S. Motor gasoline, Baltimore	10.75 -11.00	10.75 -11.00	10.75 -11.00
U.S. Motor gasoline, Norfolk	10.75	10.75	10.75
U.S. Motor gasoline, Charleston	10.50	10.50	10.50
U.S. Motor gasoline, Savannah	10.25	10.25	10.00 -10.25
U.S. Motor gasoline, Jacksonville	10.25	10.25	10.00 -10.25
California U.S. Motor gasoline, New York Harbor	11.00	11.00	11.00
California U.S. Motor gasoline, Baltimore	11.00	11.00	11.00
California U.S. Motor gasoline, Philadelphia	10.75	10.75	10.75
Water white kerosene, New York Harbor	8.00 - 8.25	8.00	8.00
Water white kerosene, Philadelphia	8.00 - 8.25	7.75 - 8.00	7.75 - 8.00
Water white kerosene, Baltimore	8.00	8.00	8.00
28-34 gas oil, New York harbor	5.00	5.00	5.00 - 5.25
28-34 gas oil, Boston district	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
36-40 furnace oil, New York harbor	6.00	6.00	6.00
36-40 furnace oil, Boston district	6.25 - 6.50	6.25 - 6.50	6.25 - 6.50
Grade C bunker oil, New York harbor	$1.05	$1.15	$1.15
Grade C bunker oil, Boston district	$1.10	$1.20	$1.20
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.
*Minimum of 12.50c delivered.

MEDICINAL OILS

Russian 885-890 s.g., 325-330 vis	$0.80 - 0.90	$0.80 - 0.90	$0.80 - 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 - 0.77	$0.67 - 0.77	$0.67 - 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 - 0.75	$0.65 - 0.75	$0.65 - 0.75

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	July 16	July 9	July 2
U. S. Motor gasoline	25.90	25.90	25.90
43-45 150 w.w. kerosene	18.40	18.40	18.40
42-44, 110 s.w. kerosene	17.40	17.40	17.40
CYLINDER OILS			
Bright stock, dark	40.00 -41.00	40.00 -41.00	40.00
600 D filtered	30.00 -32.00	30.00 -32.00	30.00 -32.00
600 Warren E filtered	24.50 -25.50	24.50 -25.50	24.50 -25.00
600 s.r. unfiltered	19.00 -20.00	19.00 -20.00	18.50 -20.00
650 s.r. unfiltered	21.00 -22.00	21.00 -22.00	21.00 -22.00
600 flash s.r.	24.00 -26.00	24.00 -26.00	23.00 -26.00
630 flash, s.r.	34.00 -36.00	34.00 -36.00	34.00 -36.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.50	19.50	19.50
250 vis. No. 6 color	18.50	18.50	18.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.50	19.50	19.50
100 vis. No. 2¾ color	15.25	15.25	15.25
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	34.50	34.50	34.50
500 vis. No. 6½ color	32.50	32.50	32.50
400 vis. No. 7¼ color	30.50	30.50	30.50
300 vis. No. 6 color	29.50	29.50	29.50
200 vis. No. 3¼ color	23.00	23.00	23.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)
WHITE CRUDE SCALE (In barrels)

	July 16	July 9	July 2
122-124 A.m.p.	4.375- 4.50	4.375- 4.50	4.375- 4.50
124-126 A.m.p.	4.375- 4.50	4.375- 4.50	4.375- 4.50
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	5.00 - 5.125	4.875- 5.125	4.875- 5.125
125-127 A.m.p.	5.00 - 5.125	4.875- 5.125	4.875- 5.125
128-130 A.m.p.	5.25 - 5.375	5.25 - 5.375	5.25 - 5.375
130-132 A.m.p.	*6.00	*6.00	*6.00
133-135 A.m.p.	*6.50 - 6.75	*6.50	*6.50
135-137 A.m.p.	*7.00 - 7.25	*7.00	*7.00
YELLOW CRUDE SCALE			
124-126 A.m.p.	4.125- 4.25	4.125- 4.25	4.125- 4.25

***Prices nominal.**

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	July 16	July 9	July 2
U.S. Motor	9.625- 9.75	*9.375	9.25
60-62, 400 e.p.	10.50 -10.625	9.625	9.50
61-63, 390 e.p.	10.75 -10.875	9.875-10.00	9.75
64-66, 375 e.p.	11.00 -11.25	*10.375	10.00
U. S. Motor, cases (cargoes)	$1.75 -$1.85	$1.75	$1.75
64-66, cases (cargoes)	$1.85 -$1.95	$1.85	$1.85

***Sales only.**

KEROSENE			
44 water white	7.25	*7.25	7.25
41-43 prime white	6.25	*6.25	6.25
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55

***Sales only.**

DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil.	3.875- 4.00	3.875- 4.00	3.875- 4.00
*30-32 translucent gas oil.	4.00	4.00	4.00
Grade C bunker oil	$0.95 - 1.10	$0.95 - 1.10	$0.95 - 1.10
Grade C bunker oil, cargoes	$0.70 - 0.80	$0.75 -$0.85	$0.85

***Less than ½ of 1% sulfur.**

MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.00 -$1.02	$1.00 -$1.02	$1.00 -$1.05
Grade C bunker oil, for bunkering purposes, taxes paid	$1.10	$1.10	$1.15

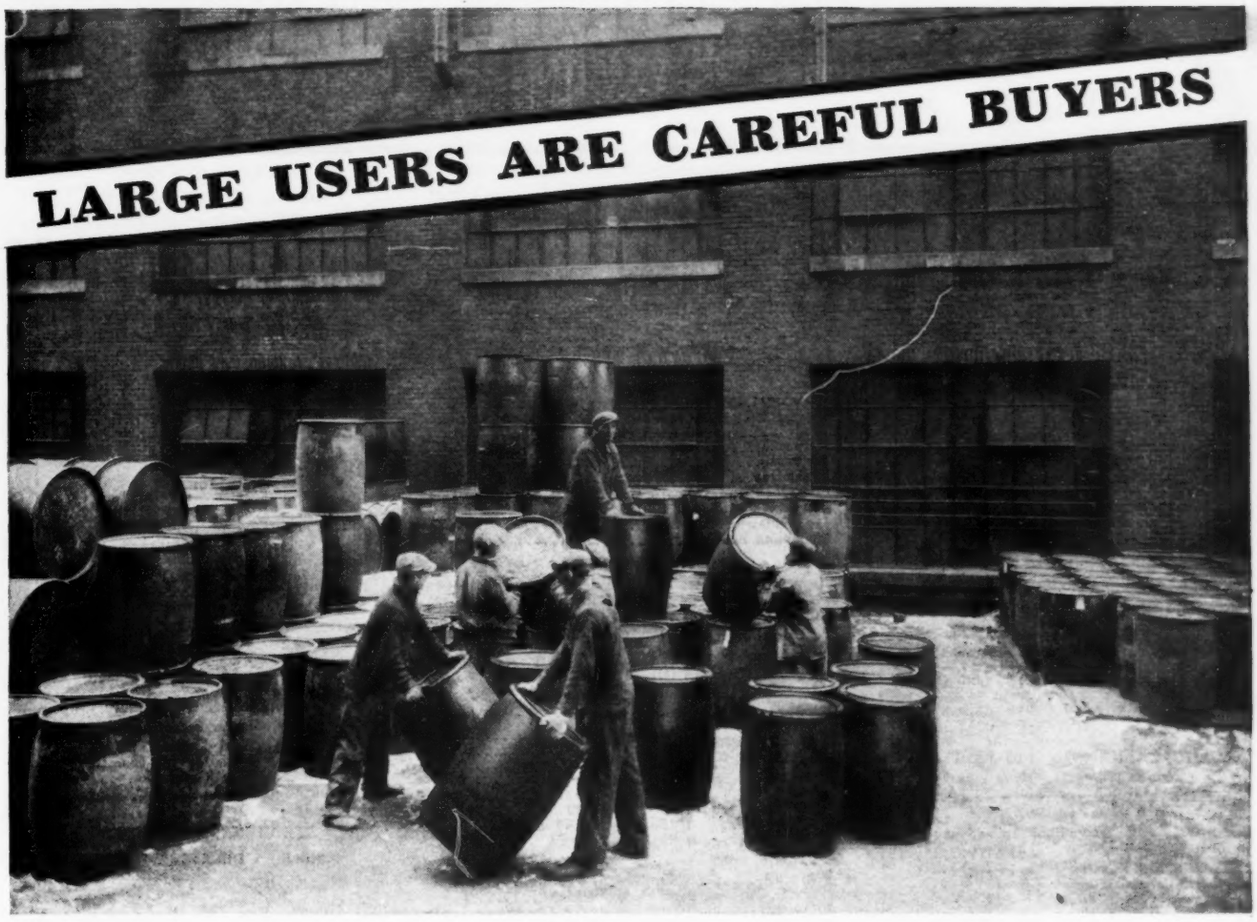
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.; cold test 0) (Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	5.75 - 6.00	6.00	6.00
200 vis. No. 3 unfiltered pale	7.75 - 8.00	7.75 - 8.00	7.75 - 8.00
300 vis. No. 3 unfiltered pale	9.25 - 9.50	9.25 - 9.50	9.25 - 9.50
500 vis. No. 3½ unfiltered pale	10.50 -11.50	11.50 -12.00	11.50 -12.00
750 vis. No. 4 unfiltered pale	12.50 -13.00	12.50 -13.00	12.50 -13.00
1200 vis. No. 5 unfiltered pale	15.50 -16.00	15.50 -16.00	15.50 -16.00
200 vis. No. 5-6 red oil	7.00 - 7.50	7.00 - 7.50	7.00 - 7.50
300 vis. No. 5-6 red oil	8.00 - 8.50	8.00 - 8.50	8.00 - 8.50
500 vis. No. 5-6 red oil	10.00 -10.50	10.00 -10.50	10.00 -10.50
750 vis. No. 5-6 red oil	11.25 -11.50	11.25 -11.50	11.25 -11.50
1200 vis. No. 5-6 red oil	14.50 -15.50	14.50 -15.50	14.50 -15.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	July 16	July 9	July 2
Gasoline, U. S. Motor, 53-55 Gravity	8.25 - 8.50	8.25 - 8.75	8.00 - 8.50
Gasoline, U. S. Motor, blends and special cuts	8.50 - 9.00	8.00 - 9.00	8.00 - 9.00
Gas Oil, 30-34, per barrel	$1.10 -$1.15	$1.10 -$1.15	$1.10 -$1.15
Diesel Oil, 27 plus, per barrel	$0.95 -$1.10	$0.95 -$1.10	$0.95 -$1.10
Bunker oil, 14-18, per barrel	$0.80 -$1.00	$0.80 -$1.00	$0.80 -$1.00
Fuel oil, 14-18, per barrel	$0.75 -$1.00	$0.75 -$1.00	$0.75 -$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 - 5.00	4.50 - 5.00	4.50 - 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 -$1.85	$1.75 -$1.85	$1.75 -$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 -$1.50	$1.45 -$1.50	$1.45 -$1.50



A Few Prominent Users

Bakelite Corporation
Vacuum Oil Company
Standard Oil Co. (Ohio)
Standard Oil Co. (Nebr.)
Commonwealth Edison Co.
Vegetable Oil Corporation
Compressed Gas Corporation, Colorado
Johns-Manville Corporation
Sherwin-Williams Co.
International Oxygen Co.
C. M. St. P. & P. R. R.
Nickel Plate R. R.
Curtis Mfg. Co.
Frigidaire Corporation
U. S. Dept. of Commerce
U. S. Dept. of Interior
Roessler & Hasslacher Chem. Co.

Bakelite Uses Hackneys

When packages must be unusually sturdy—moisture-proof — neat in appearance — and easy to handle — it is only natural that Hackney Steel Barrels and Drums should be used.

Note the unusually good condition of the large number of Hackney Seamless Removable Head Steel Barrels used by the Bakelite Corp.—many of which have seen over five years of hard service.

Compare them with the two battered and dented barrels in the lower left hand corner—that are not Hackneys. You will then understand why Hackney Barrels and Drums have been adopted by the leaders in many industries—to assure the best possible delivery of their products at the lowest possible cost.

PRESSED STEEL TANK COMPANY

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Hackney
MILWAUKEE

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926-1927 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.20
Bradford District Oil in National Transit Lines (Bradford District)	3.20
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.00
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.85
Keister Grade in National Transit Lines (Butler Co.)	1.20
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.70
Corning, O. heavy grade	1.60
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.55
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.57	Plymouth	$1.23
Lima	1.55	West Kentucky	1.33
Waterloo	1.20	*Canadian Petro.	1.95
Indiana	1.32	*Oil Springs	2.02
Princeton	1.50	*Posted by Imperial Oil Ltd.	
Illinois	1.50		

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Feb. 21, 1928

28-28.9	$0.96	41-41.9	$1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76
40-40.9	1.40		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective Feb. 21, 1928

Below 25	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

Humble Prices (Cont'd)

28-28.9	$0.96	37-37.9	$1.31
29-29.9	1.01	38-38.9	1.34
30-30.9	1.06	39-39.9	1.37
31-31.9	1.11	40-40.9	1.40
32-32.9	1.16	41-41.9	1.43
33-33.9	1.19	42-42.9	1.46
34-34.9	1.22	43-43.9	1.49
35-35.9	1.25	44 and above	1.52
36-36.9	1.28		
Mirando, Tex			$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Feb. 21, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 30	$0.75
30-30.9	0.90
31-31.9	1.05
Glasscock and Howard Counties	$0.60
Chalkfield (Howard Co.)	$0.80
Iatan district	$0.93
Corsicana heavy	$1.00

Carter Oil Co.

(Oklahoma and Kansas)

Feb. 21, same schedule as Prairie plus these grades:

24-24.9	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Feb. 21, 1928

Hutchinson and Carson Counties:

Below 31	$0.60	38-38.9	$0.88
31-31.9	0.65	39-39.9	0.91
32-32.9	0.70	40-40.9	0.94
33-33.9	0.73	41-41.9	0.97
34-34.9	0.76	42-42.9	1.00
35-35.9	0.79	43-43.9	1.03
36-36.9	0.82	44 and above	1.06
37-37.9	0.85		

Wheeler County:

Below 31	$0.60	37-37.9	$0.95
29-29.9	0.65	38-38.9	0.98
30-30.9	0.70	39-39.9	1.01
31-31.9	0.75	40-40.9	1.04
32-32.9	0.80	41-41.9	1.07
33-33.9	0.83	42-42.9	1.10
34-34.9	0.86	43-43.9	1.13
35-35.9	0.89	44 and above	1.16
36-36.9	0.92		

Gray County:

Below 27	$0.60	36-36.9	$1.02
27-27.9	0.65	37-37.9	1.05
28-28.9	0.70	38-38.9	1.08
29-29.9	0.75	39-39.9	1.11
30-30.9	0.80	40-40.9	1.14
31-31.9	0.85	41-41.9	1.17
32-32.9	0.90	42-42.9	1.20
33-33.9	0.93	43-43.9	1.23
34-34.9	0.96	44 and above	1.26
35-35.9	0.99		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23, 1927

Crane, Upton, Crockett and Pecos Counties	$0.60

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective Feb. 21, 1928

Below 28	$0.91	40-40.9	$1.40
28-28.9	0.96	41-41.9	1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76

Cotton Valley, below 36, $0.75. Rest of Cotton Valley schedule, beginning with 36-36.9 at $1.28, same as Caddo, Homer, etc.

Smackover, below 24			$0.75
do	24 and above		.90
Bellevue			1.25
*Urania, La.			.75
†East El Dorado			1.00

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La. Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia: on Feb. 6 by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp.

Below 28	$0.85	30-30.9	$0.91
28-28.9	0.87	31-31.9	0.93
29-29.9	0.89	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

(*Continued from Page* 122)

oline in all eastern markets remained unchanged over last week. At New York all sellers quoted 10.75 cents. The only thing that would indicate this price was being shaded, one seller said, was the fact that jobbers whom he considered his regular customers, were placing orders for one and two car lots elsewhere .

Philadelphia sellers quoted 10.75 cents for U. S. Motor and California gasoline was offered in two directions at the same price. New England prices were steady at 12.50 cents, delivered, and 11.25 cents f.o.b. refineries and seaboard terminals for shipment to points taking more than 1.25-cent freight rate.

Several companies have advanced their prices for kerosene 0.25 cent in the face of lower Pennsylvania refinery prices. Water white kerosene is quoted at 8.25 cents a gallon by several important sellers in the New York and Philadelphia markets, although this grade is still available at 8 cents. Eastern bunker markets were reduced 10 cents a barrel by most companies this week.

The reduction was led by Standard Oil Co. of New Jersey which dropped its price by this amount effective July 12. The Standard of New Jersey now posts $1.05 f.o.b. terminals at Bayonne, Baltimore and Norfolk and $1 at Charleston. Lighterage is 5 cents extra. Inactivity of foreign buyers was largely responsible for the third consecutive dull week in the American wax market. Demand from domestic buyers during the week ended July 14 was only slightly better.

Tanker Rates

NEW YORK, July 16.—Approximate tanker freight rates in the following trades are, to Continental ports, in shillings per ton of 2240 pounds, British Sterling; to American ports, cents per barrels:

	Crude &/ or Fuel	Refined Oil
Calif. to U.K. or Continental ports*	26/	27/
Gulf to U.K. or Continental ports*	15/	16/
North Atlantic to U.K. or Continental ports*	12/	13/
Calif. to North Atlantic ports (not E. of of N. Y.)	53c	80s
**Gulf of North Atlantic ports (not E. of N. Y.)	18c	30c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading, 4c per bbl, additional.

Purchasers, in All Fields (in Effect July 16)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Feb. 21, 1928)

‡Salt Creek below 29	$0.96
" " 29-29.9	1.01
" " 30-30.9	1.06
" " 31-31.9	1.11
" " 32-32.9	1.16
" " 33-33.9	1.19
" " 34-34.9	1.22
" " 35-35.9	1.25
" " 36-36.9	1.28
" " 37 and above	1.31
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans-Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	.85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.95	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

Refiners' Supplies

	July 16	July 9
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.70-0.75	$0.70-0.75
Sal Soda wks.	$0.90	$0.90
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks., lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	8.75	8.75

Compounders' Supplies

	July 16	July 9
Vegetable Oils		
Linseed carloads, spot, lb.	9.90	9.90
Tanks, spot	9.10	9.10
Soya Bean, Tanks, coast, lb.	9.50-9.75	9.50-9.75
Oleic Acid		
Distilled, tanks, lb.	9.00	9.00
Distilled, bbls., lb.	9.75	9.75
Saponified, tanks, lb.	9.25	9.25
Saponified, bbls., lb.	10.00	10.00
Lard Oils		
Prime Winter Strained, lb.	16.25	16.25
Extra Winter Strained, lb.	13.00	13.00
Extra, lb.	12.50	12.50
Extra No. 1, lb.	12.25	12.25
No. 1, lb.	11.50	11.50
No. 2, lb.	11.25	11.25
Tallow oil, lb.	11.375	11.375
Neatsfoot Oil		
Pure, bbls., lb.	15.25	15.25
Extra, bbls., lb.	12.50	12.50
No. 1 bbls., lb.	11.75	11.75
Cold Pressed, lb.	18.50	18.50
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	62-64	62-64
Light Pressed, tank cars, N. Y., gal.	54-56	54-56
White bleached, gal.	68-70	68-70
Yellow bleached, gal.	66-68	66-68
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y., gal.	53	53
Steam distilled turpentine, Savannah, gal.	48	48
Gum turpentine, N. Y., gal.	57	57
Gum terpentine, f.o.b. cars Savannah, gal.	50.75	50.75
Wood Rosin F, N. Y., bbl.	$8.30	$8.30
Wood Rosin F, Savn'h., bbl.	$7.50	$7.50
Gum Rosin B, N. Y., bbl.	$9.15	$9.15
Gum Rosin B, f.o.b. cars Savannah, bbl.	$8.40	$8.40
Rosin oil, pure, gal.	57	57
Rosin oil, compounded, gal.	47	47
Pine Tar		
Kiln burnt, bbl.	$12.50-14.00	$12.50-14.00
Retort, bbl.	$13.50-15.50	$13.50-15.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.	52-56	52-56

*Nominal.

Gasoline Continues to Stiffen In Chicago Resale Market

Staff Special
CHICAGO, July 14

INTEREST in the Chicago resale market for the week ended July 14 centered mainly around gasolines. With the exception of one or two short periods when prices remained static, hardly a week has passed in the last four months which has not been accompanied by an advance of .125 to .25 cent in gasoline prices.

This week was no exception and while 8 cents was the low for U. S. Motor gasoline as the week opened, practically none was available under 8.25 cents as it closed. Practically all marketers and refiners were quoting 8.25 cents on July 14 with some reporting sales at 8.375 cents.

Several resale agents said they were unable to obtain U. S. Motor gasoline below 8.25 cents from Group 3, while others said there was still some available at 8.125 cents for immediate shipment. Very few refiners were willing to quote for future delivery, most of them expressing the opinion that prices would continue upward.

Demand from the jobbing trade was excellent this week both for contract gasoline and in the spot market. Several refiners reported they were "sold up" on gasoline and would be out of the market for the rest of July. One marketer said four Oklahoma refiners were refusing to quote on gasoline, being already behind on shipments.

The chief topic of discussion in the trade this week was the possibility of a tankwagon advance or a further revision in the Q. D. A. While the Q. D. A. change which took effect on July 9 brought relief in some quarters, advancing tank car prices of the past week have almost wiped out this margin and the jobbers' spread is about as before.

Gasoline of 60-62, 437 e. p. opened at 8.125 cents, sold mostly at 8.125 to 8.25 cents July 10 and 11; at 8.25 to 8.375 cents July 12 and closed at 8.375 cents flat. The 60-62, 400 e. p. grade opened at 8.25 to 8.375 cents; was at 8.375 cents flat July 10 and 11, at 8.375 to 8.50 cents July 12 and closed at 8.50 cents flat. Gasoline of 64-66, 375 e. p. moved at 8.50 to 8.625 cents until July 12 and at 8.625 to 8.75 cents until July 14 when very little was available under 8.75 cents.

Considerable difference of opinion was expressed on kerosene this week. Some sellers reported an increased demand for it, especially during the closing days of the week, while others said their business had been slow all week. Several sellers reported jobbers beginning to fill their storage in anticipation of the fall plowing season.

Export buying both in Texas and Oklahoma also has helped the local market, the trade reported. Most sales of 41-43 w. w. kerosene were made at 4.50 to 4.625 cents until July 13 when several sellers advanced their prices and the close of the week found the bulk of movement at 4.50 to 4.75 cents.

Demand for distillate and gas oils continued at about the same rate as in the past few weeks. Prices on all grades were unchanged over the week. Distillate of 38-40 gravity sold mostly at 3 cents. Ordinary 32-36 dark gas oil moved mostly at 2.50 cents, although some sales were reported at lower figures. Dark 32-36 zero gas oil sold mostly at 2.625 cents and the straw zero grade at 2.625 to 2.75 cents.

Fuel oil prices continued to ease off this week. Demand was characteristic of the season and all grades were offered freely with the result that competition is keen and prices are being shaded. Large quantities of high sulfur fuel continued to come into this market and some of it moved at prices from 5 to 7.50 cents below the prevailing market on low sulfur Oklahoma fuels. The margin between the zero and the high cold test fuel oils continued to narrow.

Fuel oil of 28-30 gravity was at $0.85 to $0.875 until July 12 when it moved at $0.80 to $0.85. The 24-26 fuel opened at $0.70 to $0.75; was at $0.65 to $0.725 July 10, and at $0.65 to $0.70 after July 12. Prices of 18-22 fuel were down approximately 5 cents over the week; opening at $0.675 to $0.725 and closing at $0.625 to $0.675.

The 18-22 fuel oil moved at $0.60 to $0.70 until July 12 and at $0.60 to $0.65 until the end of the week, closing at $0.575 to $0.65. Quotations on Smackover treated fuel continued mostly at $0.80 to $0.85.

Rather frequent showers and thunderstorms are likely next week in the Standard of Indiana territory.

California Refiners Ask More For Export Gasoline

LOS ANGELES, July 14

THE demoralized gasoline retail price situation in California again overshadowed the export and tank car markets during the past week. Today there were indications that the retail price situation might improve in a few days.

In the export market, U. S. Motor was said to be available at 8.25 cents for shipment to east coast, but some of the refiners were asking 8.50 cents in consequence of tighter prices on east coast and slightly weaker tanker rates. There were offers of 8 cents for U. S. Motor, and as far as could be learned, no sales were made. Gasoline shipped to foreign buyers is almost entirely 400 end point and blended. This is desirable business due to the large amount of natural gasoline available at prices under 7 cents.

The tank car market is holding up fairly well, considering the condition of the retail situation. Gasoline for shipment to points outside of the state can be bought at 9 cents, with some of the product in isolated instances moving slightly under this figure, especially goods shipped to highly competitive territory. Tank car gasoline is selling at 9.25 cents up to as high as 12 cents, without tax, for movement within the state.

The fuel oil market is still sluggish, with some sellers reporting a slightly tighter market, although quotations remain unchanged. For movement in tank cars, the prices range from 65 to 75 cents, while there is no activity whatever in export circles. The shipments are holding up fairly well, due to time contracts and not to new sales.

At the close of the week, the retail gasoline situation had shown no material change.

During the recent fight for gallonage, a large number of contracts were signed at differentials ranging from 5 to 8 cents under the official service station price. This has resulted in much price cutting.

Natural gasoline showed a little strength the past week with spot stuff advancing about half a cent. The lowest price prevailing during the week was 6 cents, while natural gasoline had been available some 10 days ago at 5.50 cents. Some manufacturers are asking 6.50 to 7 cents for their product. Several new contracts were signed the past week, thus taking off the weak spot market considerable natural gasoline.

GULF Refining Company

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District Sales Offices
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Houston New Orleans Atlanta Tampa

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Gasoline Gas Oils Petroleum Coke

FUEL OILS

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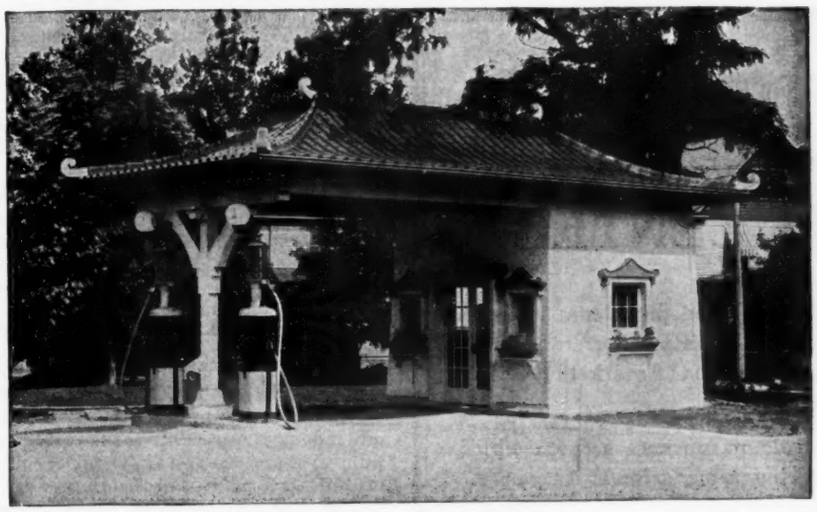
Cylinder Engine Cordage

RED AND PALE PARAFFINE OILS



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Auto Output Larger Than Year Ago

NEW YORK, July 14.—Automotive Industries this week said:

With production of cars and trucks in the United States and Canada in June approximating 440,000, the total for the first half of the year has gone well beyond the total in the first half of 1927. This gain over last year will be much larger in the last half, primarily because Ford Motor Co. was completely out of production in the last half year and is now operating at better than 3000 cars daily and is expected to continue at this rate or higher through the year.

Keener competition throughout the last half will probably be occasioned by the appearance of a considerable number of new models during July and August. Many cars which have enjoyed unusual sales records during the first half will be continued without change and will be compelled to meet the public interest in the newer models.

The fact that the Ford company is still several months behind on orders helps to limit competition in the low priced field but in price fields above this group the sales effort will be much keener.

Independent Oil Plans Stock Increase

NEW YORK, July 14.—Stockholders of July 2 record of the Independent Oil & Gas Co. will meet July 20 at Tulsa to vote on a proposal to increase the company capital stock from 1,000,000 to 2,000,000 no par shares.

Stockholders also will vote on a proposal to acquire control of the Manhattan Oil Co. of Kansas City through an exchange of stock on a basis of 1½ shares of Manhattan for one share of Independent.

California Summary Out for 1927

SAN FRANCISCO, July 13.—A statistical summary of the California oil industry for 1927 has just been published by the San Francisco office of the U. S. Bureau of Mines.

The booklet includes statistics on crude oil production and stocks, refinery throughout, and output, production and utilization of natural gas gasoline and the disposition, through shipments and domestic deliveries, of the major refined products.

Crude production in California during 1927 was 230,751,463 barrels, an increase of 6,634,450 barrels over 1926 according to the Pacific coast office of the American Petroleum Institute.

Total consumption of all petroleum products, including natural gasoline, was 249,965,083 barrels, of which 156,343,114 barrels were consumed for domestic use.

OIL STOCKS AND FINANCES

National Petroleum News

Cumberland Pipe Line Reduces Capital

CLEVELAND, July 14.—Capital stock of the Cumberland Pipe Line Co. will be reduced from $3,000,000 to $1,500,000. The reduction was approved by stockholders who met July 11 at Winchester, Ky. Par value of the shares will be reduced from $100 a share to $50 and new certificates exchanged for old on a share for share basis.

The company will pay a special dividend of $15 a share Sept. 15 to stockholders of Aug. 31 record. Transfer books of the company will be closed Aug. 15 to make the change in capital stock and will remain closed to Oct. 1.

Outstanding fractional shares will be purchased by Forest M. Towl, president, at par and accrued dividends. No fractional shares of new stock will be issued, it was announced.

New Gas Line Financed to Kansas City

CLEVELAND, July 14.—Missouri-Kansas Pipe Line Co. this week offered $1,500,000 12-year 6½ per cent first mortgage sinking fund gold bonds at 99½ and interest to yield 6.55 per cent.

The company is planning to build a pipe line into Kansas City, Mo., and eight other communities to supply the American Pipe Line Co. and Gas Service Company, Cities Service interests, with 12,000,000 cubic feet of natural gas daily. It already has built 100 miles of lines and has compressor stations under construction.

The company's compressor stations will have a total horsepower of 1665. It has contracts to purchase gas from 196 wells and holds gas rights in more than 61,000 acres, Frank P. Parrish, president, wrote underwriters.

Each $1000 bond will carry a warrant entitling the holder to buy 10 shares of common stock of the company at $5 a share until June 1, 1931, at $7.50 a share until June 1, 1934, and at $10 a share from then until maturity unless warrants are redeemed by the company at $50 each.

Mexican Seaboard Shares Taken

NEW YORK, July 13.—Approximately 49,000 shares of Mexican Seaboard Oil Corp. stock was subscribed to in the recent offering of 52,027 shares to holders of June 1 record. The price was $20 a share. Subscription rights expired July 2. Holders were granted right to subscribe for 5½ shares for each 100 shares held June 1.

Financial Notes

Union Oil Co. of California.—$785,000 5 per cent first liens bonds retired July 2.

Atlantic Refining Co.—Final installment on sale of Atlantic's holdings in Superior Oil Corp. is to be made early in August. Previous installments were received May 1, June 1, and July 1.

Sylvester Oil Co.—Offering of 25,000 no par common shares made at $10 a share.

Indian Refining Sells Stock to Employes

NEW YORK, July 14.—Indian Refining Co., Lawrenceville, Ind., has listed 75,000 additional shares of $10 common stock on the New York stock Exchange. This stock is that which certain employes were permitted to subscribe to under a plan adopted by directors May 18. The price to the employes was $10 a share.

In listing the stock the company said it had spent nearly $5,000,000 on improvements in the last four years. These improvements consisted of Cross tube stills, Cross and Dubbs cracking stills, and the Govers process for making lubricating oils. New lube equipment is said to have a capacity of 20,000,000 gallons a year.

Louisiana Oil Increases Crude Production

NEW YORK, July 14.—The Louisiana Oil Refining Co., in a listing statement filed with the New York stock Exchange, said its crude production the first four months of 1928 had been 1,570,263 barrels, compared with 1,274,498 barrels the first four months of 1927. Production of refined oils had been 130,079,710 gallons this year and 145,985,500 gallons last year.

Present daily crude production is given as 9121 barrels and refinery output 701,047 gallons daily. Since February, 1926, the company has increased its bulk distributing plants from 41 to 76.

Transcontinental Issues $12,000,000 Bonds

CLEVELAND, July 14.—An offering of $12,000,000 10-year 6½ per cent sinking fund bonds was made this week by the Transcontinental Oil Co., Tulsa, at par and interest from July 1. Proceeds will be used to retire $5,736,000 funded debt, to reduce current indebtedness, and to provide additional working capital.

Each $1000 bond has a warrant entitling the holder to buy 20 shares of common stock at $9 a share up to July 1, 1929; at $11 a share to July 1, 1930; at $15 a share to July 1, 1933, and at $20 a share to July 1, 1936.

F. B. Parriott in a letter to underwriters had this to say of the company's business:

"For the first four months of the current year, the company's gross crude oil production has averaged 12,003 barrels per day from 373 wells. In addition to this production, the company has well in excess of 300,000 barrels per day in its Yates Pool properties (based on official field proration test gauges) pinched in awaiting transportation facilities. The company, directly or through subsidiary corporations, owns, or has an interest in leases within the United States aggregating 166,968 acres, and in addition, owns interests in larger acreage in Mexico, Colombia, S. A., and Roumania.

"The company's refineries, located at Bristow and Boynton, Okla., and Fort Worth, Texas, have a combined daily capacity of 14,000 barrels and are served by 668 miles of pipe lines owned by the company or its subsidiaries. For the shipment of its products, the company operates 1,130 tank cars. Cracking plants are in operation at all refineries and those at Boynton and Fort Worth are completely equipped for manufacture of all grades of lubricating oils and wax, as well as gasoline, kerosene and fuel oil. The company has 14 casinghead gasoline plants. Refined products are wholesaled and retailed through its own filling and bulk stations and numerous agencies throughout the country under the well known Marathon brand."

General Petroleum Corp. — Capt. John Barnesson, founder, has retired as chairman of the board of this subsidiary of the Standard Oil Co. of New York.

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended July 14 Sales	First	High	Low	Last	Change
37⅞	27⅜	38	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 28	7,100	31⅞	32⅜	30⅝	31⅜	— ⅛
82½	35⅛	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....	.....	13,200	65⅛	66	57⅜	62	— 2⅜
50¼	35	46⅞	37½	$56,000,000	$ 25	Associated Oil	50cQ	June 30, 28	50	45⅞	45⅞	44½	44½	— ⅜
131¾	104	143½	95¾	50,000,000	100	Atlantic Refining	$1Q	June 15, 28	66,700	137¾	*143½	132	143½	+ 5
119	115½	118¼	116	20,000,000	100	do pfd	$1.75Q	May 1, 28	100	117	117	117	117	+ 1
35½	20¾	26⅞	20½	28,725,675	25	Barnsdall Corp. A	.....	Feb. 6, 28	10,300	22	22½	†20½	21	— 1
32½	20½	27¼	22	799,775	25	do B	.....	Feb. 6, 28	.....	.....	.....	.....	.....	.....
32⅞	20	32¾	24	51,524,150	25	California Petroleum	25cQ	July 2, 28	600	30½	30½	30	30	— 1¼
96¾	65	94⅞	70	20,785,400	100	General Asphalt	.....	.....	12,000	76⅛	77	†70	72	— 3¼
144⅞	107¼	141½	111	6,792,200	100	do pfd	$1.25Q	June 1, 28	800	115	115	†111	112¾	— 4⅛
175¾	60½	167	127	25,000,000	100	Houston Oil	.....	.....	8,900	138	139½	128¼	135	— 1½
32¾	17⅝	31⅞	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	May 7, 28	9,500	25⅜	25⅞	23⅜	24¼	— 2¾
12⅜	7⅜	39⅜	9	$3,280,340	$10	Indian Refining	.....	Dec. 15, 20	183,900	39⅜	*39⅝	25½	34½	— 2½
12	7¼	37¼	8¼	4,550,110	10	do ctfs	.....	.....	90,400	36⅞	*37¼	23	31¼	— 2¾
112	99	230	101	2,296,400	100	do pfd	.....	Dec. 15, 21	3,100	230	*230	180	220¼	— 4¾
37¾	20½	39⅛	27⅛	(sh) 3,992,122	N.P.	Lago Oil & Transport	75cQ	May 1, 28	1,300	32	33½	31½	31½	— 1⅜
18⅜	10	19¾	9⅜	(sh) 1,237,078	N.P.	Louisiana Oil Refining	.....	.....	32,400	14¼	15¾	13⅜	14⅜	— ¼
97	85¼	101	80	$4,000,000	$100	do pfd	$1½Q	May 15, 28	20	85	85	85	85	— 3
22¾	12	25½	12½	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	2,500	18	18¼	16	16¼	— 1¼
58½	31	44½	33	(sh) 2,316,692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	20,900	36⅜	36⅞	34	35¼	— ⅞
320	200	360	250	$45,942,800	$100	Mexican Petroleum	$3Q	July 20, 28	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	July 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	39	4⅜	sh) 945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	80,800	27⅝	28	22⅛	24	— 2½
39¾	25½	33¼	25¼	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	7,900	29⅛	29½	28	28⅛	— 1⅜
105	97	115½	103¼	$6,718,000	$100	do pfd	$1.75Q	June 1, 28	200	112	112	112	112	0
3¾	1⅝	7⅜	2⅜	24,298,860	10	Middle States	.....	July 1, 23	14,900	4⅞	5	4⅛	4⅜	0
2¾	1⅜	5⅞	1½	5,501,370	10	do ctfs	.....	.....	1,100	3⅝	3⅝	3⅛	3⅛	— ¾
1⅝	1	2¼	1½	(sh) 3,500,000	N.P.	Pacific Oil	.....	.....	5,400	1⅝	1⅝	1¼	1¼	— ⅜
65⅞	40½	53¾	38¼	$48,807,400	$ 50	Pan American P. & T.	.....	Oct. 20, 27	2,400	43¼	43½	40¾	40¾	— 1¼
66⅛	40¼	54⅝	37⅝	121,097,900	50	do B	.....	Oct. 20, 27	22,200	44	44⅞	41¾	42⅝	— 1
37⅞	16¾	28⅜	17	(sh) 400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	22,300	19½	19⅞	†17	17¼	— 2⅝
18⅜	8	21⅜	11⅜	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	3,600	15¾	16½	14½	15	— ⅞
83	54	106¼	70	$2,935,200	$100	do pfd	.....	July 2, 23	1,400	95	95	95	95	+ 5
60¼	36¼	44⅝	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½cQ	July 2, 28	10,300	38½	38⅝	36⅝	37⅛	— 1
1⅜	⅛	4¼	⅛	$29,622,925	$ 25	Pierce Oil Corp.	.....	.....	3,600	2⅝	2¾	2½	2¼	— ¼
24	13½	30½	16¼	15,000,000	100	do pfd	.....	Feb. 1, 22	.....	.....	.....	.....	.....	.....
5¼	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	1,800	4⅜	4⅜	3⅞	3⅞	— ⅜
33⅜	16¾	26⅞	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	13,600	26	26⅜	23	24½	— 1⅝
50	36⅜	46⅞	41	2,845,350	50	do pfd	.....	May 1, 25	150	45	45	45	45	0
33½	25	27½	19	75,959,250	25	Pure Oil Co.	12½cQ	June 1, 28	6,200	23¾	23¾	22⅛	22⅝	— ¾
115½	111⅛	115	108	13,000,000	100	do 8% pfd	$2Q	July 2, 28	190	112⅝	113¼	112⅝	113	0
28⅝	25⅝	50¾	24	$29,224,894	$25	Richfield Oil	25cQ	May 1, 28	97,200	45¾	48	43⅛	48	+ 2¼
54½	44¼	56½	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.343	Jan. 28, 28	13,800	56⅛	*56½	54¾	56¼	+ ⅝
47⅞	41⅜	51	40¾	(sh) 77,590	£2	Shell Transport & T.	97c	Jan. 23, 28	3,200	50⅜	50⅝	49⅝	49⅝	— ⅝
31¾	24⅝	31	23¼	(sh)10.000,000	N.P.	Shell Union Oil	35cQ	June 30, 28	6,800	27	27⅛	26⅛	26½	— ½
26⅝	14¼	24⅝	18⅛	$7,208,080	$ 10	Simms Petroleum	.....	Apr. 1, 27	3,800	20	20⅜	19½	20	— 1½
22⅜	15	30¼	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	.....	May 31, 24	152,600	25	26⅞	23½	24⅜	0
104½	97	109½	102½	$16,604,600	$100	do pfd	$2Q	May 15, 28	500	108¾	108¾	108½	108½	— ¼
37⅜	24⅛	34	25	27,396,590	25	Skelly Oil Co.	50cQ	June 15, 28	7,800	30½	31	29⅛	30¾	+ ½
60¾	50⅝	63⅞	53	(sh)13,016,434	N.P.	S. O. California	62½cQ	June 15, 28	12,300	59	59¼	56½	57½	— 1¼
41⅜	35½	49	37⅜	$607,910,525	$ 25	S. O. New Jersey	‡25cQ	June 15, 28	71,800	44¾	44¾	42⅝	43⅜	— 1⅜
34½	29¾	41½	28½	427,973,275	25	S. O. New York	40cQ	June 15, 28	60,700	35¼	35¾	33⅝	34⅛	— 1⅜
34⅛	30	49	31¾	(sh) 1,206,073	N.P.	Sun Oil	25cQ	June 15, 28	2,900	44	44⅞	42½	42½	— 1½
101⅝	99	109½	100	$5,000,000	$100	do pfd	$1.50Q	June 1, 28	100	105	105	105	105	— ¼
6½	3⅜	9½	2¾	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	42,900	8	8¼	6¾	7⅜	— ⅝
58	45	66⅝	50	$180,480,550	$ 25	The Texas Corp.	75cQ	July 2, 28	58,400	61⅜	62	58½	59⅜	— 1⅝
18⅞	12	17½	12⅛	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	14,000	14	14⅞	13½	13⅝	— ⅜
29⅛	19	27⅛	19⅝	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	June 30, 28	100	23	23	23	23	— 1
90⅛	85	94½	87	$20,705,200	$100	do 5½% pfd.	$1.25Q	May 15, 28	100	89	89	89	89	+ ¾
19¼	15¾	20⅝	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	17,500	17⅞	18	16½	16¾	— 1
90¾	85	90	82⅛	$72,745,900	$100	do pfd	$1.50Q	July 2, 28	300	85⅝	85⅝	85½	85½	+ ⅜
10⅛	3¼	10⅛	7	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	33,400	8¼	8¼	7½	7⅞	— ¼
56½	39⅜	57	42¾	$40,791,225	$ 25	Union Oil of California	50cQ	May 10, 28	8,200	53	53	49½	51	— 2
127½	94	128⅛	115½	30,844,000	100	Union Tank Car Co.	$1.25Q	June 1, 28	.....	.....	.....	.....	.....	.....
34½	24⅜	37½	26	(sh) 310,956	N.P.	Warner Quinlan	50cQ	July 2, 28	18,500	38½	39¾	35¾	37½	+ 2⅝
27½	20	26	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	25cQ	July 20, 28	2,400	23	23	22¾	22¾	— ¼

*New High †New Low ‡Also extras s-Stock Total Sales 1,291,110

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended July 13 Sales	First	High	Low	Last	Change
....	....	4	2½	N.P.	Ark. Nat. Gas (new)	2,705	3	3	2¾	3	0
.....	.....	7½	6¾	N.P.	do pfd	3,774	7⅛	7¼	7⅛	7⅛	+ ⅛
98⅜	80⅞	114½	90¾	100	Columbia Gas	.....	.....	.....	.....	.....	.....
107¾	100	108½	108	100	do pfd	.....	.....	.....	.....	.....	.....
15	7½	10	7	10	Devonian Oil	.....	.....	.....	.....	.....	.....
....	....	15	9¾	10	Dixie Gas & Util	.....	.....	.....	.....	.....	.....
.....	.....	95	85	100	do pfd	20	85½	85½	85½	85½	+ ½
117½	115	116	115	100	Duquesne Light pfd	.....	.....	.....	.....	.....	.....
....	....	85	80½	100	Fayette County Gas	.....	.....	.....	.....	.....	.....
12¼	6	22	12	N.P.	Houston Gulf Gas	.....	.....	.....	.....	.....	.....
59¾	37¼	58	48⅜	$ 25	Lone Star Gas	3,151	52⅞	54	52⅞	53	+ ½
....	....	36½	36	25	Petroleum Exploration	50	36	36	†36	36	— ½
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas	260	3¼	3¼	3¼	3¼	0
8	5½	7¼	6	10	Salt Creek Cons	.....	.....	.....	.....	.....	.....
26½	17	22	16¾	10	Tidal Osage	.....	.....	.....	.....	.....	.....
43	33	33⅝	30½	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....
....	....	19	18	$ 25	Wiser Oil	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended July 13 Sales	First	High	Low	Last	Change
....	....	10¼	9	10	Ark. Nat. Gas (old)	.....	.....	.....	.....	.....	.....
95	88	132	120	25	Gulf Oil	100	120	120	†120	120	—12
.....	.....	115	115	....	Houston Gulf Gas pfd	.....	.....	.....	.....	.....	.....
10¾	5½	9	5½	25	Leonard Oil & Dev	.....	.....	.....	.....	.....	.....
2.70	.30	1.00	.50	10	Omar Oil & Gas	.....	.....	.....	.....	.....	.....
....	....	.30	.20	....	Phoenix Oil	.....	.....	.....	.....	.....	.....
2¼	1¾	....	....	5	Pittsburgh Oil Dev	.....	.....	.....	.....	.....	.....
31	19	22	16¾	5	Plymouth Oil	310	20½	20½	20	20	— ¾
6	5	4¾	4	5	States Oil	18	4	4	†4	4	— ¾
3⅛	1½	4½	2¼	1	Texon Oil & Land	.....	.....	.....	.....	.....	.....
23¾	18	18	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

*New High †New Low x Ex Dividend

Oil Dividends

	Amount	Payable	Stock of Record
Atlantic Refg. pfd	$1.75	Aug. 1	July 16
Beacon Oil pfd	$1.87½	Aug. 15	Aug. 1
Buckeye P. L. q	$1	Sept. 15	Aug. 17
Cumberland P. L	$15	Sept. 15	Aug. 31
Paragon pfd. q	75c	Oct. 1	Sept. 15
Richfield Oil q	25c	Aug. 15	July 20
do extra	25c	Aug. 15	July 20
Royal Dutch	$1.879	Aug. 3	July 23
Salt Creek Prod. q	75c	Aug. 1	July 16
Shell Transport	$1.455	July 23	July 16
Sinclair Cons. pfd. q	$2	Aug. 15	Aug. 1
Sun Oil pfd. q	$1.50	Sept. 1	Aug. 10
Tide Water pfd. q	$1.25	Aug. 15	July 13
Union Oil q	50c	Aug. 10	July 18

Oil Company Earnings

Annual	1927	1926
Mexican Eagle Oil Co.	$3,348,250	$3,647,825
Half Year	**1928**	**1927**
Union Oil Co.	$5,800,000	$5,600,000
Second Quarter	**1928**	**1927**
Union Oil Co.	$3,300,000	$2,500,000

Cleveland Stock Market

July 13	Par Value	Bid	Asked	Last Sale
Canfield	100	...	...	115
do pfd	100	100	...	100
Fred G. Clark	10	3½	5	4
National Refining	25	35	35½	35
do pfd	100	130	135	132½
Paragon Refining Co.	25	14¾	15	14⅞
do pfd	100	122	124	122

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended July 13 Sales	First	High	Low	Last	Change
41⅛	17⅛	22⅛	17	£ 4,126.460	£ 1	Angio-American Oil	24.4c	June 6, 28	400	18¼	18⅜	17¾	17⅜	— ½
21½	17⅜	20½	16½	.....	£ 1	do cts. non-voting	.....	.....	200	17⅜	17⅜	17⅜	17⅜	— ⅛
3⅜	¾	5	1¾	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	400	2⅞	2⅞	2⅞	2⅞	— ⅛
6½	2½	9¾	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	500	5¼	5¼	5	5⅛	— ⅜
69	50	56	49	1,000,000	25	Borne Scrymser	‡$1S.A.	Apr. 16, 28	.....	.....	.....	.....	.....	.....
60	45	76	58	10,000,000	50	Buckeye Pipe Line	‡$1Q	June 15, 28	800	67⅞	67⅞	65	65	— 2
126	76¾	161	117¼	3,000,000	25	Chesebrough Mfg	$1Q	June 30, 28	300	134	139½	133	139¼	+ 6½
22⅜	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	5,500	16½	16⅞	16⅛	16⅜	— ⅛
137	89	114	88	1,000,000	100	Cumberland Pipe Line	‡$2Q	June 15, 28	300	98½	98⅞	98	98	— ¾
68½	47	88	64½	5,000,000	100	Eureka Pipe Line	$1Q	May 1, 28	250	74	77	74	77	+ 4
13½	3½	13	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	1,800	11⅜	12	11	11	+ 1
59¾	23	86	27	4,000,000	100	do new pfd	.....	June 30, 26	790	80½	*86	80	81	+ ½
60½	35½	89¾	35	2,000,000	100	do old pfd	.....	June 30, 26	740	82½	*89¾	80	84	+ 1½
68½	54	84¾	60	73,685,700	25	Humble Oil & Refining	‡30cQ	July 1, 28	35,200	79¼	80⅞	76¼	78	— 1¼
182	123¾	245	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	June 15, 28	700	210½	213½	210	210	— ½
64¾	37¾	71⅞	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	‡25cQ	June 1, 28	2,500	69	69	65	66½	— 2½
94½	61	89½	74¼	$5,000,000	$ 50	Indiana Pipe Line	‡$1Q	June 15, 28	300	86	86	85	85	— 1½
39	28¼	45¼	35	(ab)7,123,544	N.P	International Petroleum	25c	June 30, 28	23,300	40¼	41	38	39¾	— 1⅜
24	13¾	32⅜	19⅜	$6,363,350	12.50	National Transit Co	‡25cQ	June 15, 28	1,800	21¾	22	20⅜	21½	+ ⅛
44⅛	31¾	59½	37⅜	5,000,000	100	New York Transit	.....	July 15, 26	50	54¼	54¼	54¼	54¼	0
100	70	125	94	4,000,000	100	Northern Pipe Line	$3S.A.	July 2, 28	100	112½	112½	112½	112½	0
67⅜	52	68¼	58	60,000,000	25	Ohio Oil Co	‡50cQ	June 15, 28	1,200	63⅜	64⅝	61¾	61¾	— ⅜
39	12	84	28	10,000,000	25	Penn Mex. Fuel	$1.25	May 31, 28	2,900	38¼	42	39½	39½	— 1⅜
190	132	223	184	81,000,000	100	Prairie Pipe Line	$2.50Q	Apr. 30, 28	650	210	210	207¾	207⅜	— 2¼
55⅛	45⅜	56	47½	60,479,600	25	Prairie Oil & Gas	.....	Aug. 31, 27	9,400	48¾	48¾	†47½	47¾	— 1⅛
201½	175½	186	167	4,000,000	100	Solar Refining	$5S.A.	June 20, 28	50	180	180	180	180	+ 8
27¼	15½	35⅞	21	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	300	27	27	27	27	— 2
41¾	35	53	36¾	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 28	1,700	45¾	47	45⅜	45¼	— ¾
83	55½	100¾	70	3 ,00,000	100	South West Pa. Pipe Lines	‡$1Q	July 2, 28	.....	.....	.....	.....	.....	.....
81½	64⅝	83⅜	70⅜	230,788,513	25	S. O. Indiana	‡62½cQ	June 15, 28	16,100	75⅛	75⅞	73⅜	74	— 1¼
20⅜	14⅜	27¾	15	8 000.000	25	S. O. Kansas	.....	June 16, 24	3,100	23	23¾	21¼	21⅜	— 1⅝
130	111¾	136½	122¼	17,103.011	25	S. O. Kentucky	$1Q	June 30, 28	1,700	126¾	129	125	126½	— 1⅜
49½	40	45⅞	39⅞	4,601,100	25	S. O. Nebraska	62cQ	June 20, 28	900	41¾	41¾	41⅛	41½	0
87¾	72	79½	71	14.000.000	25	S. O. Ohio	62½cQ	Apr. 2, 28	350	73⅝	74	73⅝	74	+ 1
122	117¼	125	117	7.000.000	100	do pfd	$1.75Q	June 1, 28	60	120	120¼	120	120¼	0
21	14⅜	26	16	30,844,000	25	Swan Finch Co	.....	Nov. 1, 19	.....	.....	.....	.....	.....	.....
.....	.....	87⅛	72	124,941,600	25	Vacuum Oil	75cQ	June 20, 28	11,200	76½	79	74½	75⅞	— ⅜

•New high †New low xEx dividend ‡Also extras.

New York Curb Bonds

Week Ending July 13

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	102⅛	101⅜	101½	— ⅛
Cities Service 5s '66	96⅜	95⅜	96	— ⅜
Cities Serv. 6s '66	104	103¾	103¾	0
Cities Serv. Gas 5½s '42	94¼	94	94¼	0
Cities Serv. 6s '43	99½	99	99½	+ ½
Cont. Oil 5¼s '37	96¾	96¼	96¼	— ¼
Empire O & R 5½s '42	94	93½	93⅝	— ⅛
Galena Oil 7s '30	99	98	99	+1½
Gulf Oil 5s '37	100½	100	100	— ½
Gulf Oil 5s '47	100⅛	99¾	100	+ ¼
Independent Oil 6s '39	100½	100	100⅛	— ⅛
Richfield Oil 6s '41	136	125	136	+5
Sun Oil 5½s '39	101⅜	101	101	— ½
Trans. Cont. Oil 7s '30	105½	105¼	105⅜	+ ⅛
Warner Quinlan 6s '42	110⅛	105¾	108	—1½

New York Bonds

Week Ending July 13

	High	Low	Last	Ch'ge
Assoc. Oil Gold 6s	102⅞	102¼	102⅞	+ ⅜
Atlantic Refg. deb. 5s	101	100	100½	+ ½
Barnsdall Corp. 6s	101½	99⅜	100⅜	— ⅜
Barnsdall Corp. 6s ex-war.	92½	91½	92	+ ½
Cal. Pet. 5s	98⅞	98⅛	98½	— ⅜
Cal. Pet. 5½s	101⅞	101½	101½	— ⅛
General Asphalt 6s	108½	108	108	— ½
General Petroleum 5s	101⅜	101	101⅜	+ ⅜
Humble Oil & Refg. 5½s	102⅜	102⅛	102¼	— ⅛
Humble Oil & Refg. 5s	100½	100	100¼	— ¼
Mid. Cont. Pet. 6½s	106	105½	105½	— ½
Pan Amer. P & T 7s	104½	104½	104½	— ⅛
Pan Amer. P & T cvt. 6s	102⅞	102½	102½	— ½
Pan Amer. P & T 6s	95½	95	95½	0
Pierce Oil deb. 8s	106⅜	106¼	106⅜	0
Prod. & Refg. 8s	111	110⅜	110⅜	0
Pure Oil 5½s	99⅝	98½	98½	— ½
Shell Union Oil 5s	97½	96¼	96¼	—1
Simms Pet. 6s	102	100½	100½	—1
Sinclair Con. Oil 7s	102	101½	101½	— ½
Sinclair Con. Oil 6½s	99⅞	98¾	98⅞	— ⅛
Sinclair Con. Oil 6s D	98⅜	98⅛	98⅛	— ⅜
Sinclair Con. Crude 5½s	97⅝	97⅛	97½	— ⅛
Sinclair Pipeline 5s	95	94¼	94¼	— ⅝
Skelly Oil 5½s	93¼	93	93⅛	— ½
S. O. N. Y. 4½s	96¾	95	95½	—1
S. O. N. J. deb. 5s	103¼	102⅛	102½	— ½
Union Oil of Cal. 1st 5s-A	101⅞	101⅞	101⅞	— ⅛
Union Oil of Cal. 5s C	99½	99¼	99¼	— ¼
White Eagle Oil 5½s	96½	96⅜	96⅜	— ⅛

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended July 14 Sales	First	High	Low	Last	Change
2⅛	.55	1⅛	.75	$ 5	Amer. Con. Oilfields	27,000	.82	.84	.75	.76	— .04
7½	2¾	6⅝	3⅛	N.P.	Amer. Maracaibo	3,700	4⅜	5½	4¾	5¼	+ ½
2¾	1	4	2¼	$ 10	Argo Oil	100	2¾	2¾	2¾	2¾	— ⅛
9¾	6¾	10¼	7⅜	10	Arkansas Nat. Gas	.....	.....	.....	.....	.....	.....
20½	15½	.....	.....	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
40	20½	40½	32¾	N.P.	British American	500	37⅝	37⅝	37⅝	37⅝	+ 1¾
28¼	15½	23⅞	16½	25c	Carib Syndicate	2,300	17⅝	18⅛	17	17	— 1
58¾	40¼	71¼	54	$ 20	Cities Service	19,600	67	67½	65⅞	66½	— 1
95⅜	87	103½	94½	100	do pfd	900	100½	100½	99⅞	99⅞	— 1
8⅞	7¾	9⅝	8⅞	10	do pfd. B	200	9½	9½	9½	9½	0
29¼	22½	34⅝	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1½	2¼	1⅛	1	Colombia Syndicate	1,900	1⅜	1½	1⅜	1⅜	0
9¾	6¾	8½	6⅜	10	Consolidated Royal	200	7	7	†6⅜	6⅜	— ⅜
14⅞	9¼	17½	10	N.P.	Creole Syndicate	19,000	13⅞	14	12½	13	— ⅝
3	.50	3¼	.76	N.P.	Crown Central	2,500	2	2	1⅝	1⅝	— ⅜
12	4	30⅛	8⅛	N.P.	Darby Petroleum	3,200	24⅛	24½	20⅜	20⅜	— 3⅞
11½	4	13½	7⅞	.....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	22	1	N.P.	Derby Oil & Refining	900	1	1	1	1	— ½
16⅜	4	11⅛	7½	N.P.	do pfd	.....	.....	.....	.....	.....	.....
3¾	1	2	1	N.P.	Gibson Oil	18,500	1⅜	1⅜	1	1	— ⅜
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	148½	101⅜	$ 25	Gulf Oil Corp	8,900	128½	129	119	122¾	— 7¾
2½	.80	7⅞	1	10	Intercontinent Pet	2,300	1⅛	1⅛	1	1	0
2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	700	1¾	1¾	1½	1½	— ¼
10⅞	5⅛	9⅜	5½	N.P.	Leonard Oil & Dev.	2,900	6⅝	6¾	6½	6½	— ⅛
27½	20	32⅜	20	N.P.	Lion Oil & Refg	900	29⅞	30	26¼	26¼	— 2¾
59⅜	37	57	48⅝	$ 25	Lone Star Gas	4,000	53	53⅞	53	53	+ ⅜
2⅞	.80	1⅞	.91	1	Magdalena Synd	9,800	1	1⅜	.91	1	0
21½	20⅛	22⅜	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	36½	N.P.	Margay Oil	100	37	37	37	37	+ 1
3	1½	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	4¼	N.P.	Mexico-Ohio Oil	200	5¼	5½	5¼	5¼	— ⅛
1½	1	1½	.76	$ 1	Mountain & Gulf	1,000	.85	.85	.82	.82	+ .01
29¼	22¾	28⅝	22⅝	10	Mountain Producers	2,500	22¾	23⅜	22⅝	23	+ ⅜
5⅞	4⅜	5¾	4¾	5	New Bradford	200	5	5	4⅞	4⅞	— ⅛
6¼	4	5¼	4	10	New England Fuel	400	4¼	4⅜	4¼	4¾	+ ⅜
16	9¼	11⅝	7½	1	New Mex. & Ariz	1,500	8	8¼	7½	8	0
13¾	9	15½	11½	25	New York Oil	.....	.....	.....	.....	.....	.....
12¾	9½	13¼	10¾	N.P.	North Cent. Texas	3,000	12½	12⅞	12	12	— ½
23⅞	21¼	.....	.....	.....	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2½	N.P.	Pandem	700	2¾	2¾	2⅝	2¾	0
12⅛	7	15¼	8½	N.P.	Panapec Oil	3,600	10⅜	12	10½	11¾	+ 1⅜
9	7⅝	15½	10⅜	$ 25	Paragon Refg	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	5½	10	Pennok Oil	100	5¼	5¼	5¼	5¼	+ ⅜
.....	.....	4½	3¼	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	14½	8	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
15½	3½	12⅞	4½	N.P.	Reiter-Foster	71,300	8	8⅜	7½	7¾	— ¼
28⅜	15	31½	22	$ 25	Richfield Oil pfd	100	23⅜	23⅝	23⅜	23⅝	+ ⅛
7	4½	9⅞	4⅝	N.P.	Ryan Consolidated	400	6½	6½	5⅝	5⅝	— ⅛
8	5¼	7¾	5¾	$ 10	Salt Creek Cons	.....	.....	.....	.....	.....	.....
35½	27¼	35	27	10	Salt Creek Prod	3,200	28½	28½	27⅝	27⅝	+ ⅛
7	1¼	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
26⅛	17	22⅞	13	10	Tidal Osage	500	19	19½	18⅝	18⅝	— ⅜
23¾	15	21¾	13⅛	10	do non-voting	2,000	18½	19	18⅜	18⅜	+ ⅛
92	63½	87	82	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
23¼	7	50	18	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
7⅜	4¼	6⅝	4⅞	5	Venezuelan Petrol	14,700	5¼	5½	5	5	— ¼
32⅜	19½	25	17½	N.P.	Wilcox Oil & Gas	800	19¼	19½	†17½	17½	— 1¾
8	4⅜	8¼	5¾	$ 1	Woodley Petroleum	100	6½	6½	6½	6½	+ ⅜
6	1⅛	8⅝	2⅛	25	Y Oil & Gas (new)	1,100	5	6½	5	6⅛	+ 1⅛

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Hold A.I.M.E. Meet Just Before Expo

BARTLESVILLE, July 12.—It is planned to hold the mid-year meeting of the Petroleum division of the American Institute of Mining and Metallurgical Engineers at Tulsa, on Oct. 18 and 19, 1928, according to A. W. Ambrose, chairman of the Petroleum Division. In this way members attending the A.I.M.E. meeting will obtain the benefit of the reduced fares to the International Petroleum Exposition which is being held at Tulsa Oct. 20 to 29, and the technical men can attend both the A.I.M.E. meeting and the exposition during one trip.

The officers of the A.I.M.E. have decided to devote the meeting this fall largely to petroleum engineering, as it is felt there will be a great many field operators attending the exposition and they will be interested in the latest information in regard to the more important phases of petroleum engineering, such as repressuring both flush and old pools, gas lift, deep well drilling, etc. With this thought in mind a program has been planned along that line. At present the principal papers outlined to be delivered at this session of the petroleum engineers are as follows:

"Measurements of Original Pressure Temperature, and Gas-Oil Ratio in Oil Sands," by K. C. Sclater, chief production engineer, Marland Oil Co., Ponca City, Okla.

"Capillary Phenomena as Related to Oil Production; A discussion of Conditions in the Oil Reservoir that have Relation to Rate of Production and Ultimate Production," by F. G. Tickell, professor of petroleum engineering, Stanford University.

"The Oil Recovery Investigations of the U. S. Bureau of Mines," by R. Van A. Mills and Joseph Chalmers, petroleum engineers, U. S. Bureau of Mines, Bartlesville.

"Repressuring during the Early Stages of Development," by C. E. Beecher, chief production engineer, Empire Oil & Refining Co., Bartlesville.

"Deep Well Drilling," by R. S. Cartwright, research engineer, Prunty & Gladieux Drilling Co., Tonkawa.

"Intermittent Injection of Gas in Gas-Lift Installations," by Morgan Walker, petroleum engineer, Amerada Petroleum Corp., Tulsa.

"Supply and Demand of Petroleum during 1928," (Author not yet selected).

"Deep Well Pumping in California," by H. N. Marsh, production engineer, General Petroleum Corp. of California, Los Angeles.

"Pumping Deep Wells in the Seminole Oil Fields, Oklahoma," by M. J. Kirwan, chief engineer, Indian Territory Illuminating Oil Co., Bartlesville.

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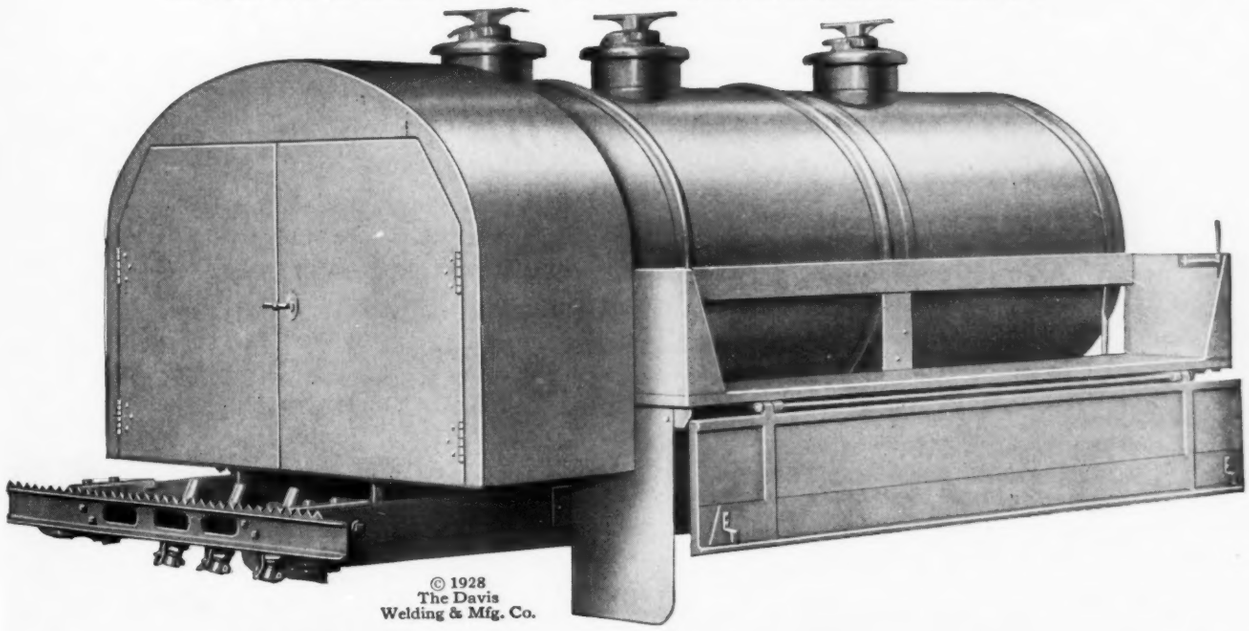

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